Writing about music: The selection and arrangement of notation in jazz students' written texts

Jodie L. Martin
LCT Centre for Knowledge-Building, RC Mills Building (A26), University of Sydney, NSW 2006, Australia

jodie.martin.phd@gmail.com

Music notation is intrinsic in the composition and performance of Western art music and also in its analysis and research. The process of writing about music remains underexplored, in particular how excerpts of music notation are selected and arranged in a written text, and how that text describes and contextualises the excerpts. This article applies 'semantic gravity' from Legitimation Code Theory to characterise notational excerpts and their integration in a written text, by focusing on how closely they are connected to a particular performance or generalised across performances. It illustrates these concepts with case studies of tertiary students' research projects to reveal how different purposes drive different notational usage when writing about music. This provides insight for music educators on how to support writing about music and the use of notational quotes.

Introduction

Western staff notation is used for many purposes within music education and musicology, in performance, composition, analysis and research, and sometimes all at the same time. It is also used to concisely represent music in written texts for both scholarship and education, through the quotation of excerpts, or the appending of whole scores. Such notational excerpts are purposefully selected to demonstrate, exemplify and illustrate not only the piece or performance under discussion but also the understandings of music that relate to theory and technique. When incorporated into a piece of writing, excerpts are described, contextualised and interpreted by the accompanying text, elaborating on the concise representation of musical ideas in notation. The basis for the selection and arrangement of notational excerpts, however, is underexplored; similarly the type of information provided by surrounding text is presumed to be self-evident.

This article considers several conventionalised ways of representing music in notation and then examines their use in two case studies of texts by jazz performance students in their honours year at an Australian conservatorium. These texts were selected for several reasons. Firstly, jazz performance education, and particularly how to write in the field of jazz performance, is under-studied. Secondly, jazz performance necessarily embraces a range of notational text types, with students occupying a position between the score-based analytical work of Western art music and the aural-based practices of popular music. Due to the wider gap between notational texts which inform jazz performance (lead sheets) and the realisation of those texts in live and recorded performance (both in the head and in the improvised sections), analysis in jazz necessarily involves transcription with staff notation to enable analysis (Owens, 2002). Students therefore demonstrate familiarity with a range

of notational text types. Additionally, while the restrictions of copyright affect the extent that notation is used in publications, the incorporation of notation in texts in educational contexts is facilitated by increased access to notation software and compatibility with word processing software. Students' writing therefore provides insight into the analytical use of notation in a text by an acculturated body of musicians without external restriction. Furthermore, as tertiary music performance education progresses into the higher degrees, there is increasing demand to be able to describe, represent and argue musical insights through written texts, such as exegeses and theses, rather than solely through performance. How they address this demand and adapt their performative knowledge to written texts is under-researched, and honours students provide insight into the resources students use at the gateway between undergraduate and postgraduate degrees. This article will demonstrate how two high-achieving jazz performance students used notation differently to achieve different purposes – describing an exemplary performance, or arguing for a particular structure of composing improvisation – in their writing. Ultimately this will grant insights for music educators for the explicit instruction of writing about music and provide a visual method for discussing this with students.

In order to investigate this use of music notation, this article draws on the concept of *semantic gravity* from the sociological framework of Legitimation Code Theory (hereafter 'LCT') (Maton, 2013, 2014) to analyse the basis of selection and organisation of notation within a written text. Semantic gravity refers to the degree to which a concept or practice is embedded within a specific context, or can transcend that context. This is pertinent to music notation. If the notation, and the written language about it, is tied to a specific performance, then the use of notation exhibits *stronger semantic gravity*. On the other hand, if the notation characterises many performances, and represents how a piece is typically played by anybody at any time on any instrument, then the notation exhibits *weaker semantic gravity.* Semantic gravity therefore provides a way for describing and comparing the representation of music in different text formats without generating a myriad of categories; it also enables insight beyond one-to-one relationships of notation to language, and instead identifies what information is being added or subtracted, and how discussion of musical theory draws on and is exemplified through performance.

Music and literacy

Research demonstrates the important and varied role writing about music plays in music education and the still emergent forms of textual representation of musical knowledge. Several studies have come from a linguistic or English for academic purposes context and have focussed on language and literacy requirements in music education. These studies cover a range of musical education contexts, from secondary (Weekes, 2014, 2015a) to non-native speakers in tertiary contexts (Wolfe, 2006, 2007) to jazz performance students in Honours (Martin, 2012, 2013, 2014) to doctoral research (Paltridge et al., 2012; Ravelli, Paltridge & Starfield, 2014; Starfield, Paltridge & Ravelli, 2012). Although they cover such a wide scope of contexts, genres, and students, they all demonstrate that the relationship between language and music is complex and the appropriate ways of representing music, other than through performance, are tacit.

Indeed, in other music education research, the focus on music notation tends to be on the acquisition of musical literacy (that is the ability to read and write music notation) or on how music helps reading and writing in general. Weekes (2015a) summarises the main preoccupations of music literacy research:

> A survey of research related to 'music' and 'literacy' uncovers two main focus areas: how to teach music notation i.e., musical literacy (e.g., Lowe & Belcher, 2012) or how music education can build student capacity in reading or literacy across the curriculum (e.g., Gromko, 2005; Hansen & Milligan, 2012). (p. 205–206)

In her own research, she highlights how high school music students can represent music in seven different ways, including graphic notation such as pitch contours, dynamics graph and structure and performing media tables in successful written responses to aural listening tasks within the Higher School Certificate examination in the final year of schooling in New South Wales (Weekes, 2015a, 2015b). This article, however, focuses on staff notation, which is more typical in tertiary jazz education.

A frequent trope in literature on musical literacy extrapolates from the analogy of music as language. For example, Waller (2010) uses the analogy to rail against the tyranny of printed music. Inevitably liberation from notational constraints focuses on improvisation as somehow a 'purer' form of music. I would argue that the analogy of music as language should be just that: an analogy rather than a template. Also, establishing the social purposes of different types of music text demonstrates that it is not always prescriptive but can also be descriptive. Furthermore, it enables us to recognise that there is not a dichotomy but rather a continuum: that is to say, music notation can be *more or less* prescriptive and *more or less* descriptive. Benedict (2012) articulates a perhaps unspoken assumption: 'isn't that what an education in music is – reading and writing music, or literacy?' (p. 153). While I applaud her emphasis on the complexity of notational practice, and the recognition of various actors within that practice, I suggest that we need to look more closely at the use of notation in order to elucidate pedagogical practices. Gould (2009) also decries the obfuscation of students by studies of teaching; as this article will demonstrate, my study of notation practices in jazz scholarship focuses on who is using it, including the students writing the research projects, what they use it for, and the various actors involved in the production and circulation of music and notation.

Style guides, although not necessarily based on research into how various writers actually write, provide an interesting snapshot of expectations and affordances of using notation in writing at different points of time. The comparison of two style guides reveals changes in technology as advice moved from writing examples by hand using India ink (Irvine, 1968) to an injunction against photocopying (Herbert & Associated Board of the Royal Schools of Music, 2001). What did not change over the 33 years between publications is an assertion that music notation should only be used to *illustrate* the text. As this article will demonstrate, this is a simplification as notational excerpts in written texts do more than just illustrate; Semantics will enable insight into what *knowledge* the notation contributes to the text.
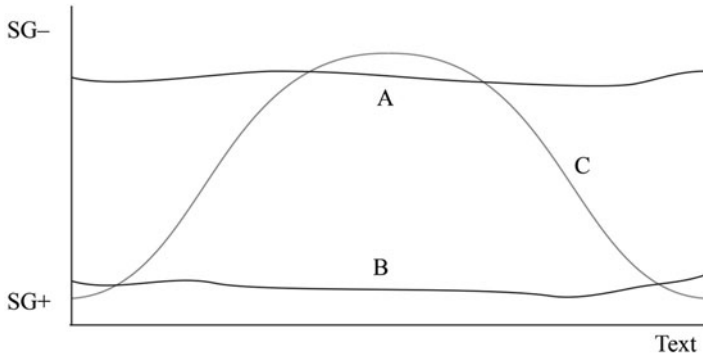
Figure 1. Three semantic gravity profiles after Maton (2014, p. 143)

Legitimation Code Theory

Legitimation Code Theory (LCT) is a sociological framework which extends and integrates concepts from a number of sources including Basil Bernstein and Pierre Bourdieu. It includes five dimensions which enable the study of knowledge practices and is being applied in a range of empirical research including a growing body of research into education practice ranging from physics to ballet, from primary school to universities and outside formal education. The dimension of Specialisation has been applied in a range of studies to provide insight into music education in primary and high school in the United Kingdom (Lamont & Maton, 2008, 2010), in high school in Australia (Weekes, 2014), in curriculum design in Sweden (Lilliedahl, 2013) as well as in tertiary jazz performance (Martin, 2013, 2016). This article will draw on another of the five dimensions of LCT, that of Semantics (Maton, 2013, 2014), and in particular the concept of *semantic gravity*.

Semantic gravity conceptualises how closely practices are related to the context they occur or develop in. For the purposes of the current study, this can be understood as how closely music notation or musical meaning relates to a particular performance, whether recorded or live. Semantic gravity can be stronger (+) or weaker (–) along a continuum of strengths. Thus reference to a particular improvisation by Pat Metheny of *Question and Answer* (1989) embodies stronger semantic gravity than a characterisation of Pat Metheny's compositional structures, which in turn employ stronger semantic gravity than a discussion of compositional technique in general. Semantic gravity can also be used to analyse change over time; that is *weakening* semantic gravity when observations move from an embodied performance to more abstract generalisations, or *strengthening* semantic gravity when abstract musical concepts are exemplified through particular performances and performers. This movement between relative strengths and weaknesses can be plotted over time, or over the course of a piece of writing, on a semantic gravity profile (Figure 1).

Semantic gravity is therefore useful for articulating movement between specific examples (stronger semantic gravity) and abstract concepts (weaker semantic gravity). Drawing on this, this article will first describe the relative semantic gravity of different types of music notation, ranging from specific to abstract representations. It will then use this as a basis to plot the use of notation in two contrasting texts and reveal how students

make different selections based on whether they are seeking to elucidate a particular performer's techniques or find compositional trends in improvisations. Following this, the article will characterise the semantic gravity of language about music notation and finally combine the semantic gravity analysis of notation and written language in the two texts. This will provide one way for music educators to make explicit for students how to write about music notation, including how to choose appropriate notational excerpts for their purpose, and how to consider what information they may need to add in writing to achieve that purpose.

Semantic gravity analysis

Semantic gravity of music notation

Notation serves multiple purposes in musical practices and thus differences in how it is used can be observed according to those purposes. That is to say, more or less musical information with greater or lesser detail and precision may be provided depending on how the notation is intended to be used. I will start by characterising different notation in conjunction with the concept of semantic gravity to form a framework which will be applied to the specific use of notation in texts. It is worth specifying that the comparisons in this analysis are relative to the specific data set and the specific use in writing about performance: in other research contexts, what counts as stronger semantic gravity or weaker semantic gravity may have to be redefined.

Let us start with a particularly important notational text type[1] for jazz performance analysis, the transcription. The notation of a transcription attempts to mirror particular performances through a strong correlation between the rhythm and pitches written and those performed, whether representing an actual improvisation, or embellishments used in jazz performance. It therefore is characterised by relatively strong semantic gravity. Other information which conveys the stronger semantic gravity in the notational text itself occurs in the textual elements such as multiple headings, which specify performer, song title, album or performance, section of the music (e.g., first solo), and transcriber. This contextual information reinforces that the music describes a specific performance, by a specific performer, at a specific time, and often a specific place. While there are still various qualities which are not or cannot easily be transcribed, such as timbre or attack, the notation is strongly tied to its context, and thus exhibits stronger semantic gravity. Figure 2 displays a transcribed excerpt of an improvisation by Brad Mehldau (transcribed by student) of *Bewitched* (Rodgers & Hart, 1940/1981). It specifies the instrumentation and the exact pitch and rhythmic meanings are as faithful to the performance as the transcriber could make them.

I take the transcription as the strongest point for semantic gravity of notation of the four types relevant in this study. I will now consider how other notational text types display weaker semantic gravity than the transcription.

The most common text type of Western staff notation in formal music education is the score. Whether for an orchestral arrangement or a piano study, a score specifies the notes to be played with accurate rhythm. Although the precise tempo may vary from piece to piece and performance to performance, the rhythm remains relatively internally consistent. Such

Figure 2. Transcription of Brad Mehldau improvisation of Bewitched (transcribed by student)

notation therefore, while specifying piece or song, nonetheless covers a range of largely similar performances. While there can be some variation between performances, such as variations of duration (i.e., swing), or of performing media if not specified, these variations occur largely within the concepts *not* prescribed by music notation, such as timbre, and some instrumental methods, such as direction of bowing, attack and articulation. The primary meanings of notation, those of pitch and rhythm, melody and harmony, are relatively consistent across performances.

The aspects which strengthen the semantic gravity in regards to scores are those which ground its performance: identifying performance instrument (e.g., violin) and how it is to be played (e.g., pizzicato), providing time reference (e.g., 4/4), and specifying both notes and rhythms to be played (e.g., swing). Nonetheless the music notation does not specify particular performers, only instruments; thus one trombonist's performance may be substituted by another trombonist's performance. It also covers, and is intended to cover, a range of performances. Therefore the same pieces of music can be played relatively the same, at different times and in different locations by different people.

As an example, let us return to the song *Bewitched*. It was originally composed by Hart and Rodgers for the musical *Pal Joey* (1940/1981). The sheet music for the musical, in addition to labelling the title and composers, specifies instrumentation and the exact pitch and rhythm for each part to play. This enables instrumentalists to be changed, and different orchestras to play the piece at different times in different venues, in support of different casts. Such is the nature of music notation, and its strength. Therefore, scores will generally exhibit slightly *weaker* semantic gravity than a transcription, as they are less locked onto specific performances and specific performers.

Arguably the most common notational text type in jazz studies is the lead sheet. Lead sheets provide fewer details than a musical score: they specify the melody and the harmonic structure with chords symbols or tabs, and the labelling of sections (e.g., bridge, head) enables these to be sequenced in the typical patterns of the given genre. Thus *Bewitched* (Rodgers & Hart, 2000), represented as a lead sheet in Figure 3, includes only the melody, with potential harmonies indicated by chords which are in line with jazz harmonic conventions.

Figure 3. Bewitched lead sheet (Rodgers & Hart, 1940/2000)

The lead sheet therefore displays *weaker* semantic gravity than the score; it covers a range of possible performances but does not precisely represent any of them. The melody itself is changed from what is notated according to rhythmic variations of swing. The chords suggest a range of consonant notes that may be applied at any time, and by various instrumentation, according to the conventions of the field. Therefore there is greater variation between the possible performances of *Bewitched* which might use the lead sheet, and the notation on the lead sheet itself, than between the possible performances described by the musical score and the score itself. Thus scored music displays stronger semantic gravity than lead sheets, and lead sheets describe weaker semantic gravity than a score.

The final notational text type to consider is the harmonic progression. A harmonic progression displays the harmonic structure of a piece and one of a number of consonant options. It does not relate to any performance, and in fact may not relate to a single song as many pieces in jazz share a harmonic structure (contrafacts) and differ in melody. To return to *Question and Answer* (Metheny, 1989), Figure 4 is a harmonic progression for the first four bars, displaying the structure largely with the chord symbols, and a consonant pitch for each chord. It therefore does not represent a particular performance but instead extracts essential information about the piece. There is therefore a relatively weak connection between this notational text type and performances; it exhibits relatively weak semantic gravity.

Figure 4. Harmonic progression of Question and Answer by Pat Metheny (1989)

This is a brief and somewhat crude overview of four notational text types; there are others which occur between and beyond these four, or there are times when one notational text type is not used for its typical purpose, e.g., a classical music score reinterpreted according to jazz principles. Nevertheless this provides a functional departure point and the four types can be placed along a cline as depicted in Figure 5, with the strongest semantic gravity, and thus the most embedded in performance, at the bottom, and the weakest semantic gravity, and thus the least embedded in performance, at the top. One reason for using this variety of notation, as shall be demonstrated below, is that while stronger semantic gravity allows for
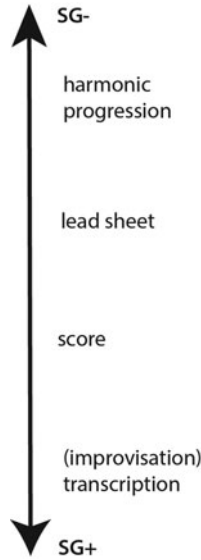
Figure 5. Cline of semantic gravity of notational text types

accurate and precise descriptions, weaker semantic gravity enables generalizable insights and analysis.

I am necessarily simplifying the complexity of notation. My point is not to provide definitive categorisations of notational text types, otherwise we risk providing an endless typology which is continually fragmented into sub-types. Instead, my aim is to highlight how semantic gravity can reveal the principles by which notation text types are selected and utilised and thus how they contribute to representing musical knowledge.

This will therefore provide groundwork for considering actual instances within the data of research.

Semantic gravity profile of notational excerpts

Mapping the variations in semantic gravity through the use of different notational quotes over the course of a text produces a profile of the text (Maton, 2014). I will compare how two performance students, in 5000-word research projects, used notational quotes in different ways to generate different semantic profiles and then consider the implications of these different profiles.

The first text to consider focused on a double bass player and his performance of bass lines rather than improvisations. The writer titled her research project 'A discussion of Ron Carter's construction of bass lines' and analysed the bass lines from three pieces which she had transcribed. In her text, she used short excerpts of the transcriptions of generally two to six bars, as shown in Figure 6.

The only variations were a single instance of the melody line for the relevant piece, and a pedagogical example from the bass musician's instructional book which demonstrated
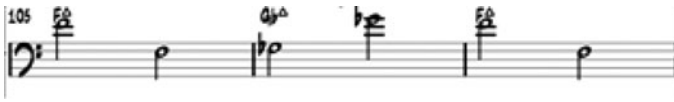
Figure 6. Bass line transcription example Beatrice bars 105–107 (transcribed by student)
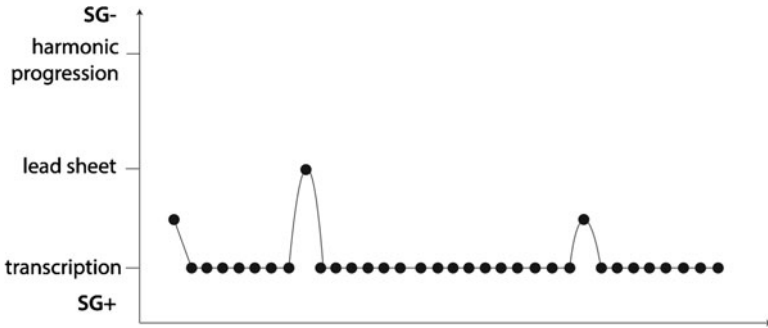

Figure 7. Semantic gravity profile of notation in text 1

consonant note choices for certain chords but which were not related to a specific performance or song. This can be represented in semantic profile (see Figure 7) as a low semantic flat line with few variations.

Given the use of transcriptions, we can therefore characterise it as having relatively strong semantic gravity, as the knowledge represented is tied to a particular performance that was not pre-composed. This is further developed in the captions as each excerpt is specified by performer (Ron Carter), piece (e.g., Dolphin Dance) and section within the piece (e.g., bars 20–24). As was observed above, transcriptions establish strong correlations between the notes played and the notes depicted, therefore having stronger semantic gravity than the melody line which would be idiomatically performed with rhythmic and potentially pitch variations. As the pedagogical example represents several hypothetical options but no particular performance, it is represented as having weaker semantic gravity than the transcriptions.

The second text focused on a range of musicians and instruments to argue for a particular improvisation technique. The writer titled his research project 'Improvising the song' and wrote his own essay question to respond to:

> Has the jazz musician's continual and insatiable desire for more harmonic, rhythmic and melodic complexity been at the expense of lyrical melodic creation in improvisation? Is it in keeping with the jazz tradition to revert to methods originally evidenced by early jazz musicians and utilise aspects of a song's written melody for improvisational material?

In comparison to text 1, he used notational excerpts of varying lengths, from a one bar lick, to 16 bars of the lead sheet, and in the appendix an entire improvisation. The second student used transcriptions as well, but in addition included lead sheet excerpts and harmonic progressions as comparisons, as well as several bebop licks. Thus semantic
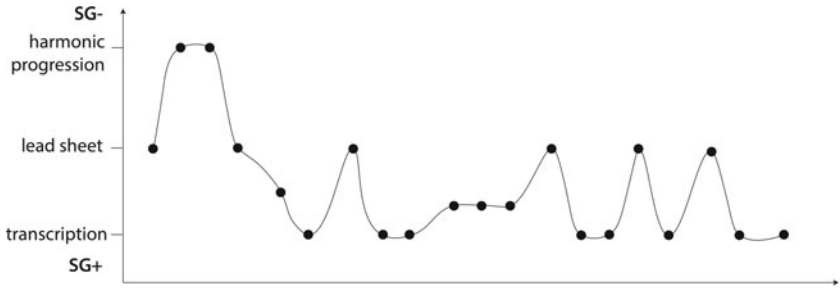
Figure 8. Semantic gravity profile of notation in text 2

gravity varied over the course of his writing as he provided different perspectives of the same piece, considered underlying structure through harmonic progressions (weaker semantic gravity) and specific performances through transcriptions (stronger semantic gravity). This is therefore depicted as a semantic gravity wave (see Figure 8).

The second student therefore exhibits what Maton (2014) calls greater semantic range, being able to move between abstraction and specificity, while the first student's reduced semantic range means that observations, at least notationally, remain embedded in specific performances.

The selection and sequencing of examples plays a role in the variation of the second text: not just in terms of relative semantic gravity but in terms of pieces of music. The first text used excerpts from the transcription of three pieces which were included interchangeably to demonstrate examples for all concepts; by contrast the second chose pieces from different musicians and thus delineated sections around each example, providing different perspectives of each example.

Before considering the implications of these differing profiles, I will explore how the text that directly referred to the notational excerpts affected the semantic gravity.

Semantic gravity of writing about music

No matter the differences in the semantic gravity profiles of the two students' use of music notation, accompanying text can provide greater or lesser connection to the specific performance, or greater or lesser generalisation across performances; it can strengthen or weaken the semantic gravity, or do both, or neither. I will first define how this can occur in texts; this is based on linguistic analysis described elsewhere (Martin 2012, 2013, 2014).

Semantic gravity is strengthened in accompanying text by providing contextual information of the performance which may be lacking in the notation such as when and where the performance took place, and who was involved in the performance. It is also strengthened by increasing the embodiment of the notation, by specifying instrumental technique, such as picking versus strumming, or pivoting off strings between notes. For example, in regards to one notational excerpt, additional precision in rhythm, timbre and technique are provided by the subsequent text: 'The bottom voice of the double stop speaks just before the upper voice, which along with the tone colour of the two notes indicates

that Carter is striking the strings with his right thumb instead of using his fingers.' It therefore connects the notation to concrete instances and observations.

Semantic gravity is weakened in accompanying text by taking the information beyond its particular context of a performance, and by providing observation independent of the realisation of the music through embodiment – such as across instruments, performers or pieces. Semantic gravity may be slightly weakened with interpretations of notation relating to musical concepts such as intervals and rhythmic patterns, (e.g., 'there is a strong intervallic identity within this excerpt') or weakened more substantially with reference to abstract generalisations such as the effect of musical choices (e.g., 'Carter uses these "kicks" quite regularly because they create momentum and added rhythmic interest.') or more aesthetic interpretations (e.g., 'the fact that Mehldau has returned to simplistically reflect on the melody having developed ideas, which were not necessarily reminiscent of the song's original melody, in the previous four bars displays a heightened awareness of musicality'; 'This chromatic sound is exceptionally strong, and creates an elegant melodic line.')

It is worth noting that the use of notational excerpts necessarily strengthens semantic gravity of text by grounding concepts in examples; consequently text about notational excerpts does not greatly weaken the semantic gravity until the knowledge becomes disconnected from the specific piece. Nevertheless it provides insight into the flow of musical knowledge between concrete examples and observations and general and abstract concepts. Again a semantic gravity profile can be drawn of these two concepts, and again a sharp contrast between the two students' texts is demonstrated by the semantic profile.

Semantic gravity profile of notation and writing

In the first text, the semantic gravity profile of the language echoes that of the notation, with observations about the notation remaining strongly embedded in performance (Figure 9). It is not so much a flat line as a ripple as she does unpack details from each notational quote, embodying the performance and strengthening semantic gravity, for example,

> In the excerpt I believe that Carter used his index and middle fingers to strike the string. Using two fingers instead of the thumb allows the musician to repeat notes quickly as it takes less time to reset your hand for the next notes.
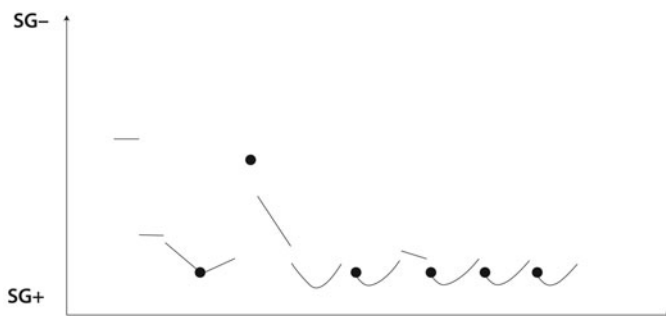

Figure 9. Semantic gravity profile of text and notation excerpt from text 1

She also weakens semantic gravity occasionally as she focuses on how specific techniques produce an effect for the band such as 'This four bars creates a sudden and dramatic change in the direction of the band and almost functions as comic relief', or for the audience such as building tension and release, e.g., 'In this excerpt Carter has used multiple large leaps bringing a strong feeling of contrast to the line.' Overall the effects of the performance remain relatively embedded in the physical experience of the audience and other band members, as opposed to being connected to musical theoretical concepts. Therefore the semantic gravity remains relatively strong, with disconnects as each notational example is given and then described and interpreted.
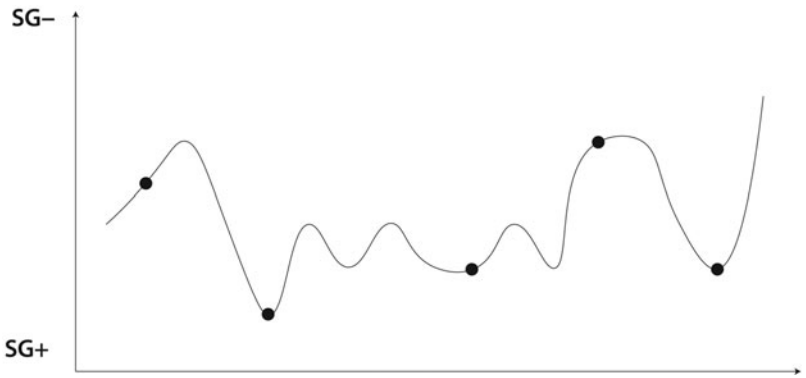

Figure 10. Semantic gravity profile of text and notation excerpt from text 2

By contrast, the second text again generates a semantic gravity wave (Figure 10). The student strengthens semantic gravity by unpacking the notation, spelling out both the notes and the performance, for example, 'Similarly the left hand in bar adds chromatic movement from B Flat – A Natural – A Flat finishing with G in the right hand's chord in bar 3'. Significantly, though, he frequently finishes discussion of a notational excerpt by weakening semantic gravity, providing general observations no longer tied to the specific performance, or performative context, but moving to the compositional trends and effects: 'It is primarily through the rhythmic "weight" (the longer the rhythm, the more powerful and noticeable it is) that the melody is recognised.'

As the student is not focusing on a specific instrument, the 'dips' on the semantic profile are not as low as the first student as he does not emphasise the embodied performance or specific instrumentation, thus semantic gravity is not as strong as in the first student's text. When he does generalise, he reaches greater abstraction by looking at overarching theoretical concepts and their effect across performers and performances, thus conveying weaker semantic gravity than much more than the first student's text.

Interpretation

The two texts described in this article have contrasting semantic gravity profiles, both in terms of their use of notational quotes alone, and the combination of notational quotes and text. This is not to privilege either method, as they were both assessed as successful texts. Why, then, did these two students choose different styles of representing musical knowledge?

The key reason is that each student produced a text with a different fundamental purpose. The first student focused on instrumental technique with the intention of improving her own performance on her instrument of study. She aimed to do this by studying a single exemplary musician. Consequently her text remains embedded in specific performances by that musician and both her notation and her text use stronger semantic gravity to demonstrate deeper insight into those particular contexts. Jazz performance itself can be highly context-dependent. By contrast, the second student posited a strategy of improvisational composition and used a range of musicians, across eras and instruments, to demonstrate its validity. Therefore his text moved between examples with relatively strong semantic gravity, and both textual and notational generalisations with weaker semantic gravity. A focus on compositional technique requires observations that can transcend contexts, but still be demonstrated in specific contexts. In short, a focus on performance and technique employs stronger semantic gravity, while connecting a performance to concepts of musical theory and generalizable insights requires a greater semantic range, employing both stronger and weaker semantic gravity.

Discussion

This insight can be implemented by music educators in a number of ways. When teaching students how to interpret different types of notation in performance, teachers can use a semantic scale, as in Figure 5 above, to scaffold their instruction. For example, in any classes involving improvisation, it may help to emphasise that a score covers a number of performances while a transcription locks onto a specific performance. This can help to introduce the ways a composition may be varied through improvisation. Similarly an analytical class may scaffold discussion of contrafacts by emphasising how similar harmonic structures may be found across various repertoires, and therefore how they represent many pieces and performances. This scale can then be brought into instructions of writing tasks.

In setting written tasks which may require notation, educators can themselves consider the range of musical knowledge they want students to demonstrate in a piece of writing. It is not always necessary to write with a large semantic scale, as demonstrated by the first student. If the purpose of the assignment is to focus on specific performance techniques or specific musicians, then teachers can recommend that excerpts from transcriptions are useful. If the aim is to enable observations beyond a specific performance, through analysis or research, then one could recommend comparing transcriptions with melody lines or harmonic progressions, in order to increase the semantic range of the text, and enable the student to express more in-depth knowledge through shifting focus between examples. Importantly, teachers can also use the semantic scale to teach students how to write about

music. Teachers may explain that when students choose to include a notational excerpt, they can write about it by adding details about performance (strengthening semantic gravity) or form generalisations about patterns and effects (weakening semantic gravity).

Finally, the gravity wave can be used to plan writing and to explain how to move between examples. As a teacher, I have used the semantic scale to map out the topics covered in a particular class from the most concrete and context-embedded to the most abstract, and then drawn a single wave to show how a paragraph – or a text – can move between these concepts. It also offered me a way to give feedback to students on writing when they did not include specifics or did not generalise. One advantage is that this concept can be used for short paragraph answers or for extended responses, where students may create multiple waves over the course of a longer piece of writing.

Together, the semantic scale for music notation, strategies for strengthening or weakening semantic gravity of notation through accompanying text, and the semantic wave will help students at different levels of musical education to understand, quite simply, how to write about music.

Conclusion

This article has demonstrated that music notation varies according to the purpose it is used for. It has also demonstrated that incorporating music notational excerpts within analytical writing involves the selection and arrangement of excerpts from different notational text types, according to the purpose of the text itself. This has been exemplified with two texts that differed in the use of music notation, one of which focused on instrumental performance technique, while the second investigated compositional elements of improvisation.

The concept of semantic gravity from LCT has been productively used to characterised the notation types relative to each other and consider how accompanying text interacts with the notation. It therefore contradicts the view from music style guides that notational quotes merely 'illustrate' accompanying text and instead demonstrates how their use helps to build musical knowledge through exemplification and abstraction. This merits fresh enquiry from research and specific instruction in music education to assist students to better understand the music knowledge they are conveying and demonstrating in their own writing. Furthermore, research into writing about other genres of music is warranted to establish whether there is similar variation in semantic gravity in the notational excerpts, or whether it largely occurs in the accompanying text.

This research therefore echoes findings in other disciplines, such as English for Academic Purposes (Ingold & O'Sullivan, 2017), Social Work and Business (Szenes, Tilakaratna & Maton, 2015), and Physics (Georgiou, Maton & Sharma, 2014), that the semantic wave is useful for describing successful writing. It further builds on this work by highlighting how non-linguistic examples contribute to this movement. However it should be noted that semantic gravity does not only apply to writing or notation; Richardson (2015) demonstrated that semantic gravity helps to understand degree of variation or abstraction away from a theme as part of a jazz improvisation. In his analysis, an exact reproduction of a composition had stronger semantic gravity while a free improvisation with no apparent link to the original source material had weaker semantic gravity. He further demonstrated

how performance in a jazz improvisation values the immediacy of the 'here and now' as musicians interact and respond to each other, creating a performance which is highly embedded in that particular moment, in contrast to classical music which generally tries to create relative consistency across performances (Richardson, 2015).

Ultimately the two students who wrote the texts described in this article are excellent musicians, and succeeded academically based on their performance rather than their writing ability. Both successfully completed the Masters of Performance program after their honours degree and have continued on to perform in orchestras, form bands, write songs and release albums. However they had written only one or two long texts during their undergraduate degrees and for their honours research projects, they both drew on advice on how to conduct musical research and how to write about it from their instrumental teachers, both of whom had recently completed Masters degrees themselves. Higher degrees in music are increasingly requiring students to recontextualise their creative practice through writing exegeses and theses, in addition to composition and performance. I therefore suggest the semantic wave – of both notation, and description about notation – is a useful way to scaffold students into demonstrating greater theoretical insight, and helping them to build greater musical knowledge. Ultimately this will not only benefit their academic grade or their continuation in formal education programs, it will also influence their knowledge of music and thus their growth as performers.

Note

1   I use the term 'notational text' to refer to any written instances of notation, to distinguish the textual forms from performances and recordings.

References

BENEDICT, C. L. (2012) Critical and transformative literacies: Music and general education. *Theory Into Practice*, **51**(3), 152–158. doi:10.1080/00405841.2012.690293

GEORGIOU, H., MATON, K. & SHARMA, M. (2014) Recovering knowledge for science education research: Exploring the 'Icarus Effect' in student work. *Canadian Journal of Science, Mathematics and Technology Education*, **14**(3), 252–268.

GOULD, E. (2009) Music education desire(ing): Language, literacy and lieder. *Philosophy of Music Education Review*, **17**(1), 41–55.

HERBERT, T. & ASSOCIATED BOARD OF THE ROYAL SCHOOLS OF MUSIC (2001) *Music in Words: A Guide to Researching and Writing about Music*. London: Associated Board of the Royal Schools of Music.

INGOLD, R. & O'SULLIVAN, D. (2017) Riding the waves to academic success, *Modern English Teacher Magazine*, **26**(2), 39–43.

IRVINE, D. (1968) *Writing about Music: A Style Book for Reports and Theses* (2nd Edn.) Seattle: University of Washington Press.

LAMONT, A. & MATON, K. (2008) Choosing music: Exploratory studies into the low uptake of music GCSE. *British Journal of Music Education*, **25**(3), 267–282.

LAMONT, A. & MATON, K. (2010) Unpopular music: Beliefs and behaviours towards music in education. In R. Wright (Ed.), *Sociology and music education*, (pp. 63–80). Basingstoke: Ashgate.

LILLIEDAHL, J. (2013) *Musik i (Ut)Bildning: Gränsdragningar och Inramningar i Läroplans(kon)texter för Gymnasieskolan [Music and the Pedagogic Discourse: Classifications and Framings of Relations to and within Curriculum for the Swedish Upper Secondary School]*. PhD. Örebro University, Sweden.

MARTIN, J. L. (2012). Language verbalising notation: An intersemiotic analysis of musical notation in student texts. *Multimodal Communication*, **1**(2), 147–161.

MARTIN, J. L. (2013). *On Notes and Knowers: the Representation, Evaluation and Legitimation of Jazz.* Unpublished doctoral thesis. University of Adelaide.

MARTIN, J. L. (2014). Semiotic resources of music notation: Towards a multimodal analysis of musical notation in student texts. *Semiotica: Journal of the International Association for Semiotic Studies/Revue de l'Association Internationale de Sémiotique*, **2014**(200), 185–201.

MARTIN, J. L. (2016). Musicality and musicianship: Specialisation in jazz studies. In K. Maton, S. Hood & S. Shay (Eds.), *Knowledge-Building: Educational Studies in Legitimation Code Theory* (pp. 193–213). London: Routledge.

MATON, K. (2013) Making semantic waves: A key to cumulative knowledge-building. *Linguistics and Education*, **24**(1), 8–22.

MATON, K. (2014) *Knowledge and Knowers: Towards a Realist Sociology of Education*. London: Routledge.

METHENY, P. (1989) Question and Answer. On *Question and Answer*. Germany: Geffen Records.

OWENS, T. (2002) Analysing jazz. In M. Cooke & D. Horn (Eds.), *The Cambridge Companion to Jazz* (pp. 286–297). Cambridge: Cambridge University Press.

PALTRIDGE, B., STARFIELD, S., RAVELLI, L. & NICHOLSON, S. (2012) Doctoral writing in the visual and performing arts: Two ends of a continuum. *Studies in Higher Education*, **37**(8), 989–1003.

RAVELLI, L., PALTRIDGE, B. & STARFIELD, S. (Eds.) (2014) *Doctoral Writing in the Creative and Performing Arts*. Farringdon, UK: Libri Publishing.

RICHARDSON, S. (2015) Messing with the magic: Making the invisible visible by using LCT to analyse knowledge-building in jazz education. Seminar presented at *LCT Roundtable*, University of Sydney, August.

RODGERS, R. & HART, L. (2000) Bewitched. In C. Sher (Ed.), *The Standards Real Book* (pp. 55). California: Sher Music Company.

STARFIELD, S., PALTRIDGE, B. & RAVELLI, L. J. (2012) 'Why do we have to write?': Practice-based theses in the visual and performing arts and the place of writing. In V. J. Bhatia & C. Berkenkotter (Eds.), *Insights into academic genres* (pp. 169–190). Bern: Peter Lang.

SZENES, E., TILAKARATNA, N. & MATON, K. (2015) The Knowledge Practices of Critical Thinking. In Davies, M. & Barnett, R. (Eds), *The Palgrave Handbook of Critical Thinking in Higher Thinking* (pp. 573–591). London: Palgrave Macmillan.

WALLER, D. (2010) Language Literacy and Music Literacy: A Pedagogical Asymmetry. *Philosophy of Music Education Review*, **18**(1), 26–44.

WEEKES, T. (2014) *From Dot Points to Disciplinarity: The Theory and Practice of Disciplinary Literacies in Secondary Schooling*. Unpublished PhD. University of New England, Australia.

WEEKES, T. (2015a) Writing about the concepts of music for success in the HSC Aural Skills examination in NSW. *Australian Journal of Music Education*, **2015**(2), 204–215.

WEEKES, T. (2015b) Mastering musical meaning: Images as interpretive resources in multimodal music texts. *Visual Communication*, **15**(2), 221–250.

WOLFE, J. (2006) A musician's English: The challenge awaiting international students in tertiary music programs in Australia. *TESOL in Context*, **16**(1), 18–25.

WOLFE, J. (2007) '*You'll Have to Start Early if You Want to be on Time for the F Sharp!' Language and the Study of Music: Implications for International Students Studying In Tertiary Music Programs in Australia*. In *ISANA International Conference* (pp. 1–7), Adelaide, Australia.

Dr Jodie Martin is a linguist whose PhD thesis, entitled *On Notes and Knowers* (2013), investigated how tertiary students represented jazz performance with notation, evaluated jazz performers, and looked at how they legitimated their own and others' authority in making claims about jazz performance. She is currently based at the LCT Centre for Knowledge-Building at the University of Sydney where she conducts research into the sociology of education with Legitimation Code Theory. Her research interests include knowledge and literacy in the creative and performing arts, and academic and disciplinary discourse.