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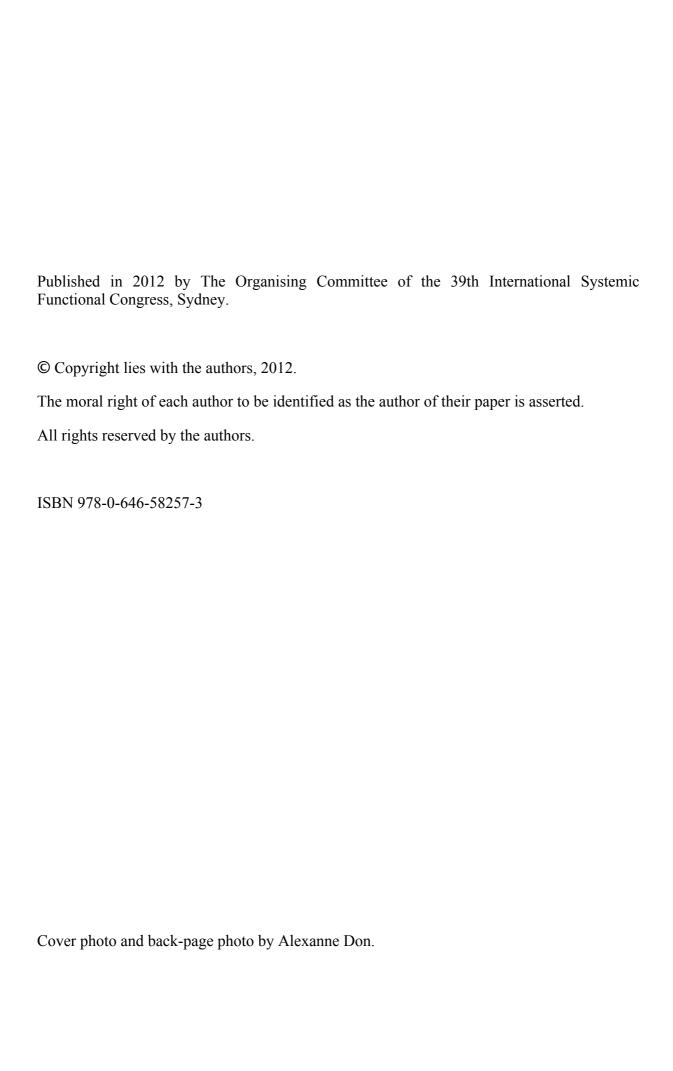
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Instantiation, realization and multimodal musical semantic waves

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Abstract

Halliday (1991/2009) describes texts as simultaneously realising their context of situation and context of culture while instantiating the system of language. To examine the use of music notation in student texts, it is useful to understand how notation instantiates the system of music and realises the contexts of culture (jazz) and of situation (music conservatory). This paper combines the examination of instantiation and realisation with the semantic codes of legitimation (Maton, 2011a, 2011b, forthcoming) from Legitimation Code Theory for the characterisation of notation types and applies them to a multimodal analysis of music notation, adapted from Unsworth and Cléirigh (2009), to identify underlying organisational principles involved in the intersemiotic construction of meaning.

Drawing on a corpus of research projects from honours students of jazz performance, the different types of notation used are examined. The notation varies in the degree to which it is connected to a concrete, embodied performance, or offers space for a range of performances. This variation is connected to the concept of semantic gravity. By considering how information is variously unpacked from the notation into text, and repacked into generalisation with greater abstraction, this analysis provides insight into the ways notation operates in a text, and how it contributes to a co-construction and prosody of meaning throughout the text.

1   Introduction

Many academic disciplines incorporate non-linguistic examples in their texts to provide additional, condensed meaning. The examination of this meaning and how accompanying text repeats, expands and contextualises provides important insight for understanding academic literacies. Music notation is a fundamental resource in the study of music; it is used to prompt performance, to distribute repertoire, to enable analysis and to facilitate teaching and learning. The use of music notational quotes within written texts is instrumental for conveying musical information concisely and accurately. Its use, however, is under-theorised, both from a multimodal perspective and from a musical perspective.

This paper endeavours to address this shortage by theorising on the use of music notation with particular reference to a corpus of six texts. These texts are 5000-word research projects written as a mandatory ungraded element of the Bachelor of Music (Jazz Performance) (Honours). All texts were by local, native speakers of English. As honours students, they were believed by academic staff to be sufficiently acculturated to the study of music to be able to reflect upon it.

Music and its corresponding notational texts will first be aligned with Halliday's (1991/2009) model of context and instance. The focus on the degrees of instantiation and abstraction in music text types shall be supplemented with the concept of semantic gravity, drawing on Legitimation Code Theory (LCT) (Maton 2011a, 2011b, forthcoming), which describes the degree to which a meaning relates to its context. Using the descriptive power of semantic gravity, the texts will be briefly characterised to demonstrate how the use of notation may be organised within a text. This provides a foundation for looking at notation with the understanding of the role it plays in its cultural and situational contexts.

Language Verbalising Notation (LVN) (J. L. Martin, forthcoming) is a framework developed from Unsworth and Cléirigh's (2009) work on multimodal grammatical

identification between language and images. It provides a starting point for describing the co-construction of meaning between notation and linguistic text. By again triangulating this information with Semantics from LCT, this time both semantic gravity and semantic density, which describes the degree of condensation of meaning, organisational principles emerge for unpacking information from the notation into text, situating it within a textual and performative context, and then repacking it with greater abstraction to enable musical principles to be generalised across a musician's repertoire, across a range of instruments, or across a range of musical situations.

This research is part of an investigation into the academic literacies of music students. It provides descriptive power for the examination of notation as well as for the analysis of interleaved modes within a multisemiotic text.

2 Music in context

Halliday (1991/2009), drawing on the work of Malinowski, Firth, Sapir and Whorf, provides a model for understanding the relationships of instantiation and realisation between language and text, and the contexts of culture and situation. I suggest that not only can music be similarly modelled, but that music and language occur as adjacent yet interwoven semiotic systems, as displayed in figure 1. Paralleling language and music thus is not to suggest that their texts instantiate their systems in exactly the same way; rather, that their texts *do* instantiate their systems, systems which are a reservoir of everything that potentially could manifest in a text.
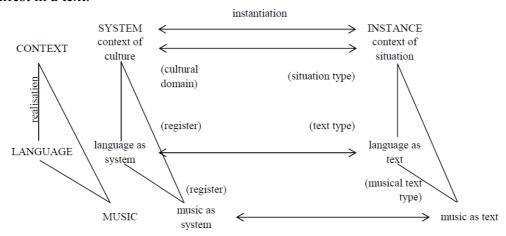

Figure 1: Language and music and context, system and instance; adapted from Halliday (1991/2009, p. 175)

This understanding of instantiation and realisation underlies a multimodal perspective; a multimodal text is understood as using the resources of the systems of both language and music, and construing the cultural and situational contexts of jazz and tertiary study. It should be noted that 'music as text' refers to instances of music in all possible manifestations – audible, written, recorded and enacted – just as language as text refers to "all the instances of language that you listen to and read. And that you produce yourself in speaking and writing" (Halliday, 1991/2009, p. 274). Perhaps it would be more appropriate to refer to music as performance; however, given that the focus of this paper is music notation I will maintain the use of the term 'music texts'.

While some of the notational quotes used in the research projects are solely intended for analysis, such as the improvisation transcriptions, others are taken from their normal performative context and recontextualised for a pedagogical purpose. The notation text types

vary in the strength of their connection to specific performances; that is, they vary in how much they realise the situation or the context. The stronger connection to its context of situation corresponds to stronger semantic gravity from LCT (Maton, 2011b, p. 65). We can therefore align instantiation/realisation and semantic gravity and place the various notation text types along these continuums (table 1). It should be noted that these are relative to one another within the given context. The degree of abstraction and semantic gravity of notation in comparison to linguistic text is not under consideration, nor is the performance of music.

Instantiation / Realisation	Semantic Gravity	Notation text type	Description
Abstract ↕ Concrete	SG- ↕ SG+	Harmonic progression	Underlying harmonic structure of pieces; may apply to multiple songs
		Lead sheet/chart	Basic details for a range of possible performances of a single song
		Pre-composed notation	Strongly prescribes elements of performance but less strictly than transcription, repeatable
		Improvisation transcription	Transcription of a specific performance; notation accurate to that performance

Table 1: Instantiation/realisation, semantic gravity and notation text types

The variations in semantic gravity of the different text types demonstrate the faculty of music notation to variously represent very specific instructions as to what was or should be played, reducing meaning potential, or to provide the essential details of a piece, creating space for multiple possible manifestations. In the case of the latter, the texts rely more on an understanding of their cultural context, i.e. jazz, in order to appropriately interpret the notation for performance with appropriate rhythmic and harmonic changes. Each of these texts has their function within the research projects.

3 Language verbalising notation

The framework of Language Verbalising Notation (J. L. Martin, forthcoming) provides a way to describe how the accompanying text repeats, expands and elaborates on the notational quotes. Descriptions of the categories of LVN are presented in Table 2.

Intermodal intensive identification occurs when the accompanying text verbalises qualities of the notation. These may be explicitly conveyed in the notation, such as "minim root notes", or more abstract qualities may be interpreted by the writer from the notation and/or listening to the music, such as "this melody epitomises true lyricism". Intermodal possessive identification identifies both human participants, such as the composer, improviser and bass player, and musical parts, such as the melody, rhythm and bass line. These two categories may or may not correspond to each other, or may combine, such as in "Carter's bass line". Intermodal circumstantial identification occurs when the text verbalises the musical circumstances of the focal notation, such as chords, harmonies and rhythms. It also occurs when the textual locations of the notation are identified, for example with references to bar numbers, sections of the piece as well as the title and recording details. Intermodal circumstantial identification: manner occurs when the text verbalises the manner or technique

in which the music was played. This may or may not be notated. Finally, intermodal circumstantial identification: effect conveys the effect of the musical choices described in the other categories on a listener, on the other members of the band or ensemble, or on musical parts. Traditional western music notation does not have the affordance to convey the effect of the music insofar as it is differentiated from what is played.

Category	The text verbalises…
Intermodal intensive identification	qualities of notation
Intermodal possessive identification	(human) participants who perform or otherwise contribute to musical parts
	musical parts that comprise the selected piece
Intermodal circumstantial identification	musical circumstance (chords, harmonies, rhythms)
	textual locations of the notation
Intermodal circumstantial identification: manner	manner in which the notation was played, whether notated or not, including technique
Intermodal circumstantial identification: effect	effect of the music choices

Table 2: Language verbalising notation

The analysis of two research projects using LVN identified some patterns; while there was variation, passages relating to a notational quote generally concluded with the effect of the qualities described. These qualities were variously situated within their textual, musical and performative context.

4   Multimodal musical semantic waves

Semantic profiles are "significant for cumulative knowledge-building and learning" (Maton, 2011a) and are produced by tracking the strengthening and weakening of semantic gravity and semantic density over time or text. Such profiles locate weaker semantic gravity and stronger semantic density at the top of the y axis and track the movement over time (x axis). Maton et al (J. R. Martin, 2011; Maton, 2011a; Matruglio, Maton, & Martin, 2011) in analysis of classroom discourse have observed that various shapes can be constructed by the profiles and describe semantic waves occurring when knowledge is sequentially unpacked and repacked, the half wave or 'broken elevator' occurring when knowledge is unpacked without being repacked, and flat lines occurring where there is little or no variation in the semantic range, that is the distance between the crests and troughs of the wave.

Profiling the semantic gravity of the notation used in the student texts, as described in Table 1, produces two main semantic profiles. Four of the six texts could be described as having a semantic flat line as they were characterised by one type of notation, the transcription of the focal musician's improvisation or bass line. A semantic ripple was evident where one student presented the decontextualised motive before presenting notational excerpts of its use, however the semantic range, the distance between peaks and troughs of the wave, was still limited. By contrast, one text used a semantic wave in employing notation text types varying in semantic gravity strength. For example, the text begins with a lead sheet excerpt, followed by two harmonic progressions of the same piece and concluding the section with another excerpt of the lead sheet. Semantic gravity is thus weakened and then strengthened, providing different perspectives of the same piece of notation by shifting in

degree of concretisation. The final student text included two levels of semantic gravity in the one musical excerpt by including the improvisation in the top line of the system, and the chord conveyed by that improvisation on the bottom line. This demonstrates the affordances of notation for providing parallel layers of meaning, but is problematic for depicting in a semantic profile.

Further research is required to investigate whether the semantic wave in one mode contributes to knowledge-building or more successful writing. The consideration of the semantic waves does highlight the contribution of notation specifically and examples generally in a text, and how they may connect or disconnect from specific instances. A more significant application is to the intersemiotic construction of meaning with text elaborating on notation.

The categories of LVN were interpreted in light of Semantics. Intensive, possessive and circumstantial identification unpacks information condensed in the notation, weakening semantic density. Possessive, circumstantial identification and manner strengthened semantic gravity by locating it within its textual context and providing stronger alignment with its embodied performance. Finally effect repacked the information with greater abstraction and generalisation across musical situations. The LVN analysis was conducted on two texts from the corpus, from the two students who have continued on to further study. The triangulation with Semantics was applied to the analysis of LVN. In the first text, which was characterised by a semantic wave in the notation text types, a semantic wave was also observed in the linguistic text. Significantly though, the qualities identified by intensive identification could be more concrete, such as "the interval of a fourth", thus weakening semantic density by unpacking the information condensed in the musical symbols, or could attain greater generalisation by abstracting qualities of the whole notational excerpt, such as "strong intervallic identity", thus strengthening semantic density and weakening semantic gravity by providing observations applicable to new or multiple contexts. Thus the high points of the semantic profile were variously provided by either intermodal intensive identification or effect. By contrast, the second text analysed appeared to have a smaller semantic range; the effects described were strongly connected to the embodied experience of the listener in the given context, thus providing stronger semantic gravity than the first text's abstractions generalised across instruments, eras and contexts. Although the use of notation ensured there was some semantic variation, this might better be described as a semantic ripple rather than a semantic wave.

5 Conclusion

The meanings made in musical notation can be understood by situating the texts within Halliday's model of instantiation and realisation. The triangulation of this understanding with the notion of semantic gravity from LCT demonstrates the semantic wave present in student texts as the different notation types incorporated vary in the strength of their relation to their performative context and in the degree of abstraction. These notation types variously construe the cultural context of jazz and the situation of performance and analysis. Language Verbalising Notation was briefly introduced as a framework for exploring how text elaborates and expands on meanings made in notation. By again triangulating this with Semantics from LCT it was found that information from notation was unpacked and related to its context of situation, and repacked with greater abstraction which speaks to the greater context of culture, that is jazz performance.

This research contributes to the understanding of music and music notation. It also highlights the repurposing of notation from performance for academic texts in a pedagogical

context. Further research is required to see whether the semantic variations observed contribute to knowledge-building and student success. Investigating variations in semantic gravity is useful for understanding non-linguistic examples in texts; investigating semantic gravity and semantic density provides insight into the interaction between linguistic and non-linguistic text.

References

Halliday, M. A. K. (1991/2009). The notion of "context" in language education. In J. J. Webster (Ed.), *Language and Education* (Vol. 9, pp. 269-290). London: Continuum.

Martin, J. L. (forthcoming). Language verbalising notation: an intersemiotic analysis of musical notation in student texts. *Multimodal Communication*.

Martin, J. R. (2011). Bridging troubled waters: Interdisciplinarity and what makes it stick. In F. Christie & K. Maton (Eds.), *Disciplinarity: Functional linguistic and sociological perspectives* (pp. 35-61). London: Continuum.

Maton, K. (2011a). *Mastering semantic waves: A key to cumulative knowledge and social justice*. Paper presented at the Australian Systemic Functional Linguistics Association Annual Conference.

Maton, K. (2011b). Theories and Things: The Semantics of Disciplinarity. In F. Christie & K. Maton (Eds.), *Disciplinarity : Functional Linguistic and Sociological Perspectives* (pp. 62-84). London ; New York: Continuum International Publishing Group.

Maton, K. (forthcoming). *Knowledge and Knowers: Towards a realist sociology of education*. London: Routledge.

Matruglio, E., Maton, K., & Martin, J. R. (2011). *Waves through time: Temporality and the semantic wave*. Paper presented at the Australian Systemic Functional Linguistics Association National Conference.

Unsworth, L., & Cléirigh, C. (2009). Multimodality and reading: The construction of meaning through image-text interaction. In C. Jewitt (Ed.), *The Routledge handbook of multimodal analysis* (pp. 151-163). London: Routledge.

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