Musical Shaping Gestures: Considerations about Terminology and Methodology

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ABSTRACT: Fulford and Ginsborg's investigation into non-verbal communication during music rehearsal-talk between performers with and without hearing impairments extends existing research in the field of gesture studies by contributing significantly to our understanding of musicians' physical gestures as well as opening up discussion about the relationship between speech, sign and gesture in discourse about music. Importantly, the authors weigh up the possibility of an emerging sign language about music. This commentary focuses on three key considerations in response to their paper: first, use of terminology in the study of gesture, specifically about 'musical shaping gestures' (MSGs); second, methodological issues about capturing physical gestures; and third, evaluation of the application of gesture research beyond the rehearsal context. While the difficulties of categorizing gestures in observational research are acknowledged, I indicate that the consistent application of terminology from outside and within the study is paramount. I also suggest that the classification of MSGs might be based upon a set of observed physical characteristics within a single gesture, including size, duration, speed, plane and handedness, leading towards an alternative taxonomy for interpreting these data. Finally, evaluation of the application of gesture research in education and performance arenas is provided.

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FULFORD and Ginsborg's paper provides systematic insight into the gestures and signs produced by performers with and without hearing impairments in the context of ensemble rehearsal-talk (that is, the verbal discussion among musicians that takes place between segments of play during a rehearsal). This commentary will consider the following issues in response to their paper: 1) terminology in the study of gestures; 2) limitations of the present methodology used to capture gestures; 3) evaluation of the use of musical shaping gestures (MSGs) in other contexts, specifically in music education (with children) and music rehearsal (with adults).

TERMINOLOGY

Fulford and Ginsborg define gesturing in human communication at the outset of their paper. An important distinction between 'signs' and 'gestures' is made with reference to Kendon's continuum (McNeill, 1992). Accordingly, 'spontaneous gesticulation' lies at one end of the continuum (where 'gestures accompany speech'), with 'speech-linked gestures' (where gestures can 'replace words', such as via illustrating or pointing) next to it. 'Emblems' feature in the middle of the continuum (where 'gestures render speech unnecessary' because of culturally-determined signs), while 'pantomime' and 'sign language' lie at the other end (where gestures are used 'in place of speech'). Crucial differences are thus established between gestures which accompany and replace speech, while the continuum highlights the complex relationships between gesture, speech and sign as used in human communication.

In this study, which focuses on the gestures taking place between musicians during rehearsal when they are engaged in talk about music, Fulford and Ginsborg effectively analyse the different occurrences of speech and gesture from spontaneous gesticulations and speech-linked gestures to emblems and sign language. They posit an umbrella term to encompass the discourse within the music rehearsal context, namely 'Musical Shaping Gestures' (MSGs). My understanding is that MSGs refer broadly to the physical gestures that emerge in any discourse about music and thus may represent any of the components on Kendon's continuum. Existing research already indicates that there are parallels between gestures used in music rehearsal communication and those used in everyday human communication (see Davidson, 1991,

2006; King & Ginsborg, 2011), so there could be difficulties in establishing when a gesture is a *musical shaping gesture* rather than merely a *gesture*, yet the term MSG does at face-value delineate discourse pertaining directly to music (and presumably this may apply beyond the rehearsal context). There is an interesting functional distinction to be made about MSGs in relation to the specific stimuli to which they belong: on the one hand, MSGs could be *descriptive*, such as when they describe the character of a particular musical phrase or theme within a piece; on the other, MSGs could be *prescriptive*, that is when they prescribe how a particular phrase or theme might sound in performance. Given the significance of this new term, consistency within and outside the report is fundamental in a field which is already laden with terminology.

METHODOLOGY

The current method involved systematic observation of the gestures produced by performers in rehearsal during segments of rehearsal-talk (that is, when the performers discussed the music that they were working on). In line with existing studies (see Davidson, 1991, 1993, 2006; King & Ginsborg, 2011), Fulford and Ginsborg used pre-determined categories of gesture to code these data, specifically emblems and illustrators (after Ekman & Friesen, 1969): emblems are culturally-defined gestures while in this case illustrators referred to "all other spontaneous speech gestures". Three new sub-categories were generated for the latter, namely 'beating', 'demonstrators' and 'shaping' (see above regarding terminology). Two further categorisations of the data took place: first, the verbal discourse was coded according to 'modes' of communication after Seddon and Biasutti's (2009) framework; second, the verbal discourse was analysed according to the different 'topics' under discussion, including pulse, rubato, tempo and synchrony. The methodology involved cross-comparing the frequency of different gesture types (emblems and illustrators) with the 'mode' of communication and, by way of selected examples, the 'topic' of communication. There are two points to consider in response to the method adopted in this study: first, the choice of categories, and second, the coding process itself.

Choice of Categories

Previous studies about gesture indicate that there are many different ways to categorise them (see Kendon, 1996) and the authors acknowledge that there are numerous typologies. One key consideration for any researcher is whether or not to develop new categories of gesture in response to a set of data, or to apply pre-determined categories of gesture. With this in mind, the article opens a doorway into the coding of MSGs and their development in future studies. A broader range of pre-determined categories (and sub-categories) might be used in follow-up studies so as to enable clearer distinctions between different observed gestures, or to allow greater flexibility in the interpretation of MSGs, such as by including emblems, illustrators, metaphoric, deictic and iconic categories. Furthermore, gestures might be categorised according to context, as musician-specific (as indicated in the examples in this paper, such as Angie's 'sweeping gesture'), music-specific (for example, tempo-based gestures) or even speech-specific (for example, relating to articulation of specific words).

Alternatively, this line of research might lead towards the classification of MSGs based upon systematic observation of a set of physical characteristics within an observed gesture, including, for example: size (large/medium/small); duration (long/medium/short); speed (fast/medium/slow); plane of direction (horizontal/vertical/diagonal/circular/semi-circular); and handedness (right-hand only/left-hand only/both hands in parallel motion/both hands in contrary motion/both hands linked). It would be interesting to compare whether or not similar physical characteristics are common across MSGs relating to 'modes' or 'topics' of communication about specific musical parameters. For example, according to the description presented in Fulford and Ginsborg's data, Paul's 'chopping gesture' (which is collaborative and about tempo) could be described as small, short, fast, vertical and with both hands in parallel, and these characteristics might be observed in other musicians' gestures about tempo. Furthermore, the different perceived physical characteristics of these gestures could be measured using motion capture or gesture recognition technology so as to provide an objective angle on the data.

The Coding Process

In Fulford and Ginsborg's study, the frequency of gestures was calculated in relation to rehearsal talk according to 'modes' of communication, as instruction, cooperation or collaboration after Seddon and

Biasutti's framework (2009). The distinction between cooperation and collaboration modes in the original framework was not entirely clear – both terms could be regarded as synonymous. For example, collaboration could be differentiated by application, hence 'Collaboration (technical)' and 'Collaboration (interpretation)'. A clearer overview of the entire range of 'topics' evident in the rehearsal-talk might have been provided in this study along with reports of the frequency of the different types of gestures in relation to each of the topics of discussion. This would facilitate insight into what types of gesture might be produced in relation to specific musical parameters.

The coding process might be developed in the following two ways. First, respondent validation might be incorporated into the methodology (Lincoln & Guba, 1985) to allow the participants to confirm the transcriptions of rehearsal-talk and to review the coding of gesture types, 'modes' and 'topics'. Participants might be able to offer new insights about the discourse as well as to corroborate the researchers' observations. Second, as indicated above, the current observational approach, which relies upon subjective interpretation of the data by the researchers, could be followed up with analyses of MSGs using gesture recognition technology and taken into laboratory-type settings using motion capture technology. The authors indicate this possibility in their report.

FUTURE APPLICATIONS OF GESTURE RESEARCH

Fulford and Ginsborg's study highlighted the importance of non-verbal discourse in music rehearsal communication among individuals with and without hearing impairments. Given the prevalence of MSGs, the authors ask 'whether it is possible to sign music', or to support 'the development of a formal sign language of music in the absence of speech'. They claim that such a system does not exist 'because it has never been necessary' and comment further that even though 'vocabularies of signs for the production of musical sound have indeed been contrived [...] a sign language for music that draws upon them, rather than using arbitrary signs, would be both more natural to produce and easier to understand by musicians and non-musicians alike.' This prompts several questions: 1) does knowledge of British Sign Language (BSL) improve communication skills among musicians (or individuals in general), such as by increasing the efficiency and effectiveness of discourse about music and, if so, should all musicians be trained in BSL in order to facilitate their communication about music?; 2) does knowledge about the types of MSGs in relation to modes and topics of rehearsal talk improve the efficiency and effectiveness of discourse among performers and, if so, should performers with or without hearing impairments be offered specialist instruction about MSGs, such as those observed in these rehearsals, in order to facilitate their communication in rehearsal?; 3) should existing musical training systems that incorporate signs, such as Kodaly and solfège, become fully integrated into music curricula where they do not already take place so as to facilitate use of gestures and signs about music?

A social experiment might involve asking musicians (of different ages and levels of expertise) to rehearse without verbal communication so as to examine the ways in which MSGs function in the absence of speech altogether (hence to fully 'sign' the rehearsal). This exercise might be applied in any rehearsal context, including chamber groups, small bands and larger ensembles as well as with orchestral conductors. It is documented in previous research that the balance between talk and play in rehearsal can shift depending on the familiarity and expertise of the performers, with studies indicating that there is more play and less talk in established groups (see Goodman, 2000; Williamon & Davidson, 2002; King, 2006). It is plausible to suggest, therefore, that the MSGs in rehearsal will be as vital during talk as play, and that the need to communicate without speech is already embedded in rehearsal discourse.

It would also be interesting to carry out a series of intervention studies using two groups of musicians, one with specialist training in BSL and awareness of MSGs, the other with no training in BSL or awareness of MSGs, to enable comparison of the value of training in these areas, such as the effectiveness and efficiency of communication among performers with different types of BSL/MSG training. The scope of this research could be broadened beyond the existing context too, to include, for example: comparisons of performers' MSGs with their non-verbal gestures and signs in 'everyday' conversation; comparisons of performers' MSGs during 'rehearsal-talk' with their use of non-verbal gestures and signs in 'rehearsal-play' (segments of the rehearsal involving actual playing) and in performance; comparisons of performers' MSGs when working with familiar and unfamiliar partners in 'mixed' ensembles (groups with different types of instruments; for example, a piano trio) and 'same' ensembles (groups with the same types of instruments; for example, a string quartet) as previous theory suggests that motor actions can be more easily absorbed when performers play corresponding instruments (Keller, 2010); comparisons between MSGs between co-performers and instructors, coaches or tutors; and comparisons between MSGs produced by performers and conductors.

The value of educating children about how we use signs and gesture in both everyday communication as well as specifically in discourse about music is undoubtedly immense – the prevalence of 'baby signing' classes plus the integration of signing in schools within the UK, for example, points towards this. Further analysis of the ways in which existing musical signing systems work – such as how signs link with pitch in solfège and physical gestures link with rhythm in Dalcroze – might be undertaken alongside the analysis of MSGs to observe potential parallels in their physical characteristics. If we can educate children about the ways in which professional performers communicate about music by integrating MSGs into everyday music teaching, then this might lead towards more efficient and effective communication both inside and outside of the rehearsal and performance arena.

Overall, Fulford and Ginsborg's paper provides an exciting contribution to gesture studies as well as to research more generally in the fields of music psychology, education and performance studies. Their study is ground-breaking in that it introduces the term MSGs in relation to the study of non-verbal discourse about music, it examines MSGs using performers with and without hearing impairments, and it opens up discussion about a sign language in and about music. This commentary extends ideas about the range of analytical possibilities and classifications of MSGs beyond those undertaken by Fulford and Ginsborg which might be explored in future research.

NOTES

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