Accepted manuscript published in Diálogos (ed. Luis Gago), Orquesta y Coro Nacionales de España, 2013.

The Conductor–Orchestra Dialogue: Modes of Communication in Rehearsal and Performance

ELAINE KING

I recall a conversation that took place between two orchestral musicians just before they went on stage to perform Debussy's *Prélude à l'Après Midi d'un Faune*. The principal flautist, who plays the long flute solo at the beginning of the piece, said "I'm just going to shut my eyes and play it as I want to!" The other musician laughed and said, "Why not? It's your moment after all!" Of course, if all orchestral musicians shut their eyes and played as they wanted to in a concert, the resulting sound could be highly disconnected and unappealing. The Western tradition of having a dedicated conductor who is responsible for the artistic direction of an orchestra was established by the early nineteenth century; since then, the structure of the orchestra has developed in size and order. This essay will consider the relationship between the conductor and the orchestral musicians, specifically to examine the modes of communication that take place between them in rehearsal and performance. In so doing, it will explore the extent to which dialogue is possible within this relationship. To begin, the conductor's role will be addressed through determining the orchestra's social structure. Then, attention will be given to the rehearsal process so as to highlight the way in which dialogue operates in this context. Finally, the way in which conductors and orchestral musicians coordinate with one another during performance will be discussed.

The Orchestra's Social Structure

Like any human relationship, the relationship between a conductor and his orchestra may be beautiful one moment and turbulent the next. The social structure of the orchestra is built upon a hierarchy of relationships: the conductor is the 'head' or nominal leader of the orchestra, while the leader of the first violin section is also the orchestra's main leader or *concertmaster*. Each section has a principal and co-principal (for example, the first trumpet is the principal of the brass; the first oboe is the principal of the woodwind) while the other musicians are ranked in numerical order (for example, first trumpet, second trumpet, third trumpet and so on). In the strings, this system operates according to pairs of players on 'desks' who are numbered from front desk (one) to back desk. Further, the string players on each desk are ranked according to the 'outside' player (who will play the upper or first part if the musical lines divide as per the score) and the 'inside' player (who will play the lower or second part when the musical lines divide). In this system, the front desk 'outside' string player is the principal of the section, while the front desk 'inside' player is the co-principal.

Interestingly, the orchestra's social structure has been used as a model for business organisations over the past several decades. For example, in his book, *All Together Now,* Harvey-Jones (1994) uses the orchestra as a metaphor to explore the way in which hierarchies can operate to achieve coordination and cooperation in group work. However, one might question the extent to which such a tight social structure permits freedom for individuals to develop their ideas (or to allow 'artistic license' in the case of orchestral musicians). Indeed, the leadership role of the conductor merits close attention, for the establishment of superiority by a conductor is by no means straightforward. Robert Faulkner (1973) highlights three crucial elements in the conductor–orchestra relationship: reciprocity, respect and trust (p. 149). These are features that might be identified in any strong human relationship. He describes the conductor, or 'focal superior', as an authoritative figure, yet he emphasises that the system of authority in an orchestra should be a flexible, reciprocal process: it is

'more than a pattern of static roles and statuses' (p. 156). Evidently, he suggests that the process by which the conductor acquires legitimacy reflects some form of respect and trust between the two parties.

In accord with Faulkner's awareness of flexibility in the relationship between conductor and orchestra, Yaakov Atik (1994) suggests that 'effective' conductors demonstrate a style of leadership that is dynamic and open to change, less dictatorial: 'over time, there is a gradual relinquishing of control for the good of the collective effort' (p. 24). He describes three stages in this process: the testing phase (players explores the boundaries of the relationship); the working phase (both conductor and musicians know what to expect from each other); and the 'transformational' phase (where there is more sharing of responsibilities and diminished hierarchical boundaries; p. 27). In effect, a shift towards a more democratic stance is conveyed, although the paradox between leadership and democracy is sustained. Atik remarks that 'the orchestral player may very well find himself in the position of suppressing his needs for individual expression for the sake of the collective task' (p. 22).

Social psychological research suggests that, in order for any group to function, the members need to have a personal sense of 'affiliation' (Douglas, 1993): there needs to be a connection or association between individuals and the group as a whole. Affiliation is highly dependent on an individual's *sense of self* within the ensemble. Atik discovered in his research that orchestral musicians had to compromise their sense of self to a certain extent in order to enable themselves to feel a part of the ensemble. As stated previously in my research with Jane Davidson, since between 50 and 100 people make up an orchestra, with section leaders and a conductor, complex and subtle interactions are required in order for the group to function successfully. An individual orchestral musician occupying a relatively low rank with the hierarchical structure may be asserting an inappropriately prominent voice to make his or her personal views common knowledge within the context of a whole orchestra rehearsal; here, the role of section leader – as filter to the conductor – is the mechanism through which the player can express views (Davidson and King 2004, p. 107). Whereas in a small chamber ensemble without a conductor, such as a string quartet, musicians should have the opportunity to negotiate verbally (and nonverbally) their musical ideas during rehearsal; in an orchestra, the possibility of such negotiation is limited. Indeed, orchestral musicians need to be realistic about their opportunities for contributing individual interpretative ideas, for as the saying goes, 'too many cooks spoil the broth'. This begs the question as to whether or not the orchestra, as a social instrument, is merely the sum of its parts because individual musicians' ideas may be suppressed for the sake of the dominant (conductor's) voice. In a successfully operating ensemble, one would hope that conductors and orchestral musicians alike would describe the social and musical experience of orchestral performance as *synergetic*, that is reflecting something that is greater than the sum of its parts.

Dialogue in Rehearsal

During orchestra rehearsals, which are typically led by the conductor, different kinds of musical activity take place as a piece of music is prepared for a concert. Conductors can treat the rehearsal like a 'dry run' of the performance, by running through a piece from beginning to end as if performing it. At any time, however, the conductor might stop-and-start the run so as to convey specific technical or expressive information to the orchestral musicians, or to re-run a particular

extract of the music, or to break down a section so as to isolate individual parts (such as by getting the first violins to play on their own, or hearing the first oboe with the first flute). In the process of rehearsing a piece of music, the conductor and the orchestral musicians will engage in dialogue with one another using both *verbal* and *nonverbal* discourse. Different types of 'talk' (verbal discourse) will emerge from the conductor, including exchanges to provide directions about where to play from (e.g. "let's go from the top", or "let's start again at Letter E") as well as guidance on the coordination of parts and expression of the music, including handling the tempo (e.g. "it needs to be move on there; it needs to be slightly quicker across that section", or "take your time at the start of the new section"), dynamics (e.g. "a bigger sound is needed from the strings"), and balance (e.g. "everybody play down; let the bassoons come through"). In his study of 'correction talk' in rehearsal, Weeks (1996) observed that conductors will sometimes talk as the orchestral musicians are playing so as to issue guidance *concurrently* with the playing, or immediately *after* something has occurred, either by talking over the music as the orchestra continues to play or by stopping the playing altogether to issue the verbal instruction (p. 276).

Although professional etiquette dictates that orchestral musicians should not talk during rehearsal, sometimes players need to ask questions or pass remarks to one another, such as the leader of the first violin section clarifying the bowing directions to his section. Research indicates that too much talking, either from the conductor or in the form of questions from individual players, can disrupt the flow of a rehearsal (see Yarbrough 1975, Durrant 1994, Weeks 1996, Price and Byo 2002). For this reason, conductors are often advised to rely upon nonverbal indicators to communicate their ideas during rehearsal (Durrant 1994), including gestures, singing, humming, counting aloud, clicking or tapping the pulse. Interestingly, Joseph Kerman describes this type of discourse as an 'arcane sign–gesture–and–grunt system' (1985, p. 196), yet studies on music and gesture (see Gritten and King 2006; 2011) reveal the fact that the signs and actions depicted by musicians function in similar ways to those used in everyday conversation.

There are four main categories of gestures used in everyday communication which are relevant to our understanding of the discourse used by conductors in rehearsal, and some of these will be transferred into performance too (see Davidson and King 2004, p. 112):

- *adaptors*: movements of self-stimulation, such as head-scratching and touching the finger to the nose;
- *regulators*: movements that allow for entrances and exits, such as when using an open arm gesture to indicate to someone to walk ahead and pass through the door first, or when the conductor uses his left hand to cue the melodic entry of the cor anglais in Dvorak's *New World* Symphony;
- *illustrators*: self-explanatory gestures of emphasis with direct musical or speech translations, such as making a cradling arm movement when talking about a baby, or the conductor using a bold open-handed sweeping motion with the left arm to convey to the brass section to play out;
- *emblems*: culturally defined gestures, such as putting the thumb up to sign 'good'.

Conductors use regulatory gestures and illustrators to indicate to orchestral musicians when and how something should happen. Even so, Durrant (1994) found that some conductors use emblems extensively, not least to substitute for spoken technical and expressive instruction (for example,

rubbing the fingers together next to the left ear, which might indicate "listen to your sound" or even "nurse the intonation"). Davidson (1997) suggests that the most successful conductors on the international professional circuit are those who not only keep to nonverbal communication in rehearsal, but who are also efficient in their use of illustrators and regulators, and keep emblems to a minimum given the time involved in learning their meanings.

The dialogue that arises between the conductor and the orchestral musicians in rehearsal might be regarded as highly one-sided, for the conductor dominates much of what is said and done. Nevertheless, the conductor necessarily responds to what is already happening musically within the ensemble, moulding and adapting the pace of the rehearsal around the needs of the orchestral musicians. Likewise, the orchestral musicians constantly express themselves through their parts, but respond to the instructions and guidance of the conductor. They may be encouraged to take liberties in their playing, particularly during solo passages, such as the principal flautist's solo at the start of Debussy's *Prélude*. So, the conductor–orchestra dialogue in rehearsal reflects elements of everyday conversation insofar as it contains talking and communicating with nonverbal gestures. However, more subtle exchanges of information take place when the conductor and orchestral musicians perform together, and the nature of dialogue in such instances assumes another level of meaning.

Dialogue in Performance

In order to perform together, orchestral musicians rely upon two modes of communication: aural communication (that is, signals or cues relayed in the musical sound) and visual communication (that is, signals or cues relayed via eye contact, facial actions, body movements and physical gestures). Musicians need to be able to hear each other so that they can coordinate their parts; each musician (including the conductor) constantly listens to and responds to the nuances of expression in the sound which are produced in accordance with the realisation of the score, such as fluctuations in timing, gradations in dynamic and changes in articulation, timbre and intonation. In effect, aural signals (or cues) are continually produced by the orchestral musicians and, when playing, each individual orchestral musician's attention is divided between monitoring the sound produced from his own part and attending to the sound produced from the players around him (see Waterman 1996; Keller 2008). At the same time, the orchestral musician observes and responds to the visual signals (or cues) relayed by the conductor. Even though the conductor's mode of communication is purely visual, it controls (to an extent) the body of sound produced by the orchestral musicians.

As visual and aural information is exchanged between the conductor and orchestral musicians, it is plausible to suggest that they are engaged in a form of dialogue. But, to what extent is dialogue really possible given the nature of this communication? First, there is the issue of control – is something a dialogue when one person (the conductor) is effectively dictating how something should be said? One might consider the possibility that the conductor actually delivers a monologue in concert, as the performance is about the expression of his musical ideas to the audience through the medium of the orchestral musicians. Second, there is the issue of communication modality – is something a dialogue when the two parties contribute essentially different types of information? Arguably, individuals do converse with one another on a daily basis using different modes of communication, including the person who talks at length to someone else who merely nods in reply! The mode of communication should not influence the possibility of dialogue; indeed, the conductor–orchestra dialogue in performance could be regarded as a highly dynamic exchange of information

and I would argue that despite the level of control assumed by the conductor, the dialogue is highly creative for both parties.

Orchestral musicians constantly monitor a conductor's baton movement in order to learn to anticipate and react to it. Visual signals are only partially conveyed by the baton though. The baton movement is absorbed within the conductor's overall body movements, including capricious gestures, changing postures and different facial expressions, which convey information about the mood and character of the music. As noted previously, conductors can use different types of gestures, especially illustrators and regulators, to convey information (both in rehearsal and in performance). In effect, therefore, the conductor communicates much more than just a beat, for the members of an orchestra might read visual signals about expression during performance through a conductor's entire body language. Saying this, the orchestral conductor is often regarded (rightly or wrongly) primarily as a timekeeper: he is the person responsible for setting the main tempo of the music and coordinating the entries and exits of the players. Indeed, the most fundamental requirement of any musical group is that the individual parts fit together, and the coordination of an orchestra is all about timing.

For the orchestral musicians, performing in time with other people requires more than just the ability to count and to realise the overall tempo, for the execution of each beat needs to be carefully monitored (see Goodman 2002). There are two main skills involved in timekeeping: anticipation and reaction. Orchestral musicians carry out complex predictions that are intimately bound to reactions gained through aural and visual feedback: on the basis of the previous note, when is the next note going to sound? These predictions are combined with interaction skills that are used to facilitate coordination: tracking (or following), whereby the individual musician follows the timing of another player or the conductor (this is sometimes described as 'hunting', for the hunter tracks its prey by anticipating and reacting to its movements); and cooperating, whereby performers mutually adjust to one another. The former is a one-way process; the latter is a two-way process. In a conductor–orchestra dialogue, one would expect the musicians to be tracking (following) the conductor at all times. In reality, however, the musicians are likely to be cooperating with each other as much as observing the visual signals relayed by the conductor. At the same time, the conductor will be tracking and cooperating with the orchestral musicians by anticipating and reacting to their sounds. The dialogue is actually dominated by aural communication which is more important than visual communication – the simple explanation for this is that we hear music, we don't see it!

In order to explore this point further, it is helpful to consider early research by Rudolph Rasch (1979) and Anthony Clayton (1985) on the synchronisation of notes in ensemble music performance. Rasch set out to measure the precision with which ensemble players could play together. He found that perfect synchrony is not possible, so ensemble performers must try to create the 'illusion of synchrony' in their playing. Interestingly, his studies showed that slower pieces are more difficult to coordinate (because the musicians have to sub-divide the musical pulse in their heads; also see Luck 2011) as well as passages involving tempo changes, pauses and entries following rests or breaks in the music. Interestingly, Rasch (1988) undertook a survey of chamber music recordings to find out the average size of a musical group employing a conductor: he noted that ensembles involving ten or more players almost invariably used a conductor. In the light of his survey, he established a cut-off value of 9.5 players and, hypothetically speaking, suggested that in an imaginary ensemble of that size, the quality of synchronisation would be 'as good with conductor as without' (p. 87). So, with an

ensemble involving more ten or more players, synchronisation should be improved with a conductor. The value of a conductor to a large ensemble, such as an orchestra, cannot thus be underestimated. This point is tested in a series of short experiments by Clayton (1985) who explored the sources of timing information in ensemble performance systematically.

According to Clayton, there are four main sources of timing (p. 72): the ensemble (that is, aural and visual communication from fellow musicians), the conductor, the composer's score, and the musician's internal timing (that is, counting in their heads). He monitored the relative contribution of each timing source and the consequent level of accuracy achieved by systematically eliminating visual and aural communication between the drummers and conductor. He observed that timing accuracy was 75% poorer when the musicians were separated from each other and without a conductor. He claimed that the ensemble itself (the fellow musicians) was the most powerful factor in the achievement of coordination: 'to be separated from the other players is a more serious loss in terms of accuracy than the loss of the conductor' (p. 87). He asserted, however, that the presence of a conductor could improve temporal precision: 'the normal role of the conductor is to give general or "ballpark" rather than specific temporal guidance' (p. 107). As noted previously, the conductor conveys purely visual information, while the musicians in the ensemble provide the essential aural information as well as some visual signals.

Clayton carries out further experiments on timing accuracy to test these modes of communication. He notes, for example, that when participants in an experiment are asked to tap in time with a series of sounds and a series of lights, the auditory tracking (tapping to sounds) is more precise than the visual tracking (tapping to lights), and when combined, the participants preferred to track to the sound source when the cues were offset. Even though such experimental research indicates that musicians probably depend on aural information from fellow musicians over and above the visual signals relayed by a conductor, Clayton admits that in an orchestra, 'despite musicians' independence, they are still in some way bound to the conductor...who, in performance, is "driving the engine"' (p. 114)!

So, how do orchestral musicians track the visual signals of their conductor? Clayton suggests that musicians acquire a 'schematic representation' in their minds of a conductor's movement which provides a benchmark for anticipation and reaction in performance. He refers specifically to the baton signals of a conductor: 'The player constantly monitors the baton wave, comparing the actual trajectory from moment to moment with an acquired schematic trajectory' (p. 147). He states, however, that 'the planning of a conductor's beat is not a conscious process. [...] The trajectories employed by a particular conductor could be learned in rehearsal so there would be ample opportunity for a player to acquire a representation of the framework within which the conductor communicates his requirements' (p. 186). The idea of each musician developing a personal 'framework' of both aural and visual signals from conductors and fellow musicians helps to explain how orchestral players keep in time with one another: the individual musician makes ongoing comparisons between internal schematic representations and the actual realisation of notes in performance.

In summary, even though a conductor can assist and improve the coordination of an orchestra, and musicians will indicate that they are 'following' the conductor, evidence suggests that the actual process of coordinating sound in an orchestra is far more complex: orchestral musicians are

constantly tracking and cooperating with the aural (and visual) signals produced by their fellow musicians in the ensemble as well as following the pure visual cues of the conductor; they are dividing their attention between playing their own part and monitoring the parts around them. It is plausible to suggest that each individual performer in the orchestra participates in a micro-dialogue with his or her fellow musicians and the conductor whilst at the same time contributing to the combined musical action. The conductor, however, is primarily participating in a macro-dialogue with the orchestra, for he is responsible for coordinating and shaping the party as a whole, for realising the overall sound of the ensemble.

Conclusion

Ultimately, as with any organisation comprising a large group of people, someone has got to lead in order to make productivity efficient and effective. Within the social structure of the orchestra, the conductor is that appointed leader, the person responsible for making key decisions and acting as the driving force of the group. So, from the outset, the conductor's relationship with orchestral musicians can be assumed to be dominant and any such dialogue that takes place within rehearsal and performance will inevitably reflect this. Research indicates that in order for a conductor to sustain a successful relationship with his orchestra, he should build the respect and trust of his players in rehearsal (and, as suggested above, this might happen through an evolving style of leadership which includes relinquishing some of that artistic control).

During rehearsal, the conductor can engage with the orchestra using verbal and nonverbal discourse; in performance, however, the conductor is effectively a visual agent, a mime artist, for he communicates entirely through visual (nonverbal) channels by anticipating and reacting to the sounds produced by the orchestral musicians. One might say that his contribution to the performance is somehow limited; indeed, one often wonders whether or not an orchestra could actually perform in concert without its conductor! Arguably, the conductor acts as the central cog of the orchestral wheel, for he facilitates coordination among players through providing visual signals about entrances and exits of parts as well as expressive indications about the mood and character of the musical sound. The dialogue in performance revolves around aural communication, whereby both the conductor and the orchestral musicians track and cooperate with one another so as to achieve the illusion of synchrony. Given that playing in time is the fundamental requirement of performing in a musical group and that the conductor casts the principal decision in determining how slow or fast to perform a piece of music, the conductor controls (to an extent) the body of sound.

I have described in this essay the social structure of the orchestra, the nature of discourse operating in rehearsal as well as the modes of communication used between conductors and orchestral musicians in performance. Our understanding of the social and musical skills underpinning the conductor–orchestra relationship helps us to appreciate the complex processes involved in ensemble playing and the nature of the highly dynamic and creative dialogue that unfolds on stage in live orchestral concerts.

REFERENCES

Atik, Y. (1994). The Conductor and the Orchestra: Interaction Aspects of the Leadership Process. *Leadership and Organisation Development Journal*, **13**, 22–28.

Clayton, A. (1985). *Coordination between Players in Musical Performance*. Unpublished PhD Dissertation, University of Edinburgh, UK.

Davidson, J. (1997). The Social in Musical Performance. In D. J. Hargreaves and A. C. North (eds.), *The Social Psychology of Music* (pp. 209–28). Oxford: Oxford University Press.

Davidson, J. and King, E. (2004). Strategies for Ensemble Practice. In A. Williamon (ed.), *Musical Excellence: Strategies and Techniques to Enhance Performance* (pp. 105–22). Oxford: Oxford University Press.

Douglas, T. (1993). *A Theory of Groupwork Practice.* London: Macmillan.

Durrant, C. (1994). Towards an Effective Communication: A Case for Structured Teaching of Conducting. *British Journal of Music Education*, **11**, 56–76.

Goodman, E. (2000). *Analysing the Ensemble in Music Rehearsal and Performance: The Nature and Effects of Interaction in Cello–Piano Duos*. Unpublished PhD Dissertation, University of London, UK.

Goodman, E. (2002). Ensemble Performance. In J. Rink (ed.), *Musical Performance: A Guide to Understanding* (pp. 153–67). Cambridge: Cambridge University Press.

Faulkner, R. (1973). Orchestra Interaction: Some Features of Communication and Authority in an Artistic Organisation. *The Sociological Quarterly*, **14**, 145–57.

Gritten, A. and King, E. (eds.) (2006). *Music and Gesture.* Aldershot: Asghate.

Gritten. A. and King, E. (eds.) (2011). *New Perspectives on Music and Gesture.* Farnham: Ashgate.

Harvey-Jones, J. (1994). *All Together Now.* London: Heinemann.

Keller, P. (2008). Joint Action in Music Performance. In F. Morganti, A. Carassa and G. Riva (eds.), *Enacting Intersubjectivity: A Cognitive and Social Perspective on the Study of Interactions* (pp. 205–21). Amsterdam: IOS Press.

Kerman, J. (1985). *Musicology.* London: Fontana.

Loft, A. (1992). *Ensemble! A Rehearsal Guide to Thirty Great Works of Chamber Music.* Oregon: Amadeus Press.

Luck, G. (2011). Analysis of Conductors' Temporal Gestures. In A. Gritten and E. King (eds.), *New Perspectives on Music and Gesture* (pp. 159–75). Farnham: Ashgate.

Price, H. E. and Byo, J. L. (2002). Rehearsing and Conducting. In R. Parncutt and G. E. McPherson (eds.), *The Science and Psychology of Music: Creative Strategies for Teaching and Learning* (pp. 335–51). Oxford: Oxford University Press.

Rasch, R. (1979). Synchronisation in Performed Ensemble Music. *Acustica*, **43**, 121–31.

Rasch, R. (1988). Timing and Synchronisation in Ensemble Performance. In J. Sloboda (ed.), *Generative Processes in Music: The Psychology of Performance, Improvisation and Composition* (pp. 70–90). Oxford: Clarendon.

Waterman, M. (1996). Emotional Responses to Music: Implicit and Explicit Effects in Listeners and Performers. *Psychology of Music,* **24**, 53–67.

Weeks, P. (1996). A Rehearsal of a Beethoven Passage: An Analysis of Correction Talk. *Research on Language and Social Interaction,* **29/3**, 247–90.

Yarbrough, C. (1975). Effect of Magnitude of Conductor Behaviour on Students in Mixed Choruses. *Journal of Research in Music Education*, **23***,* 134–46.

***

Elaine King is Senior Lecturer in Music at the University of Hull, UK. She has published widely on aspects of solo and ensemble performance, including gestures, breathing, rehearsal strategies and social interaction. She has co-edited three volumes to date: *Music and Gesture* (2006) and *New Perspectives on Music and Gesture* (Ashgate 2011) with Anthony Gritten; and *Music and Familiarity: Listening, Musicology, Performance* (in press) with Helen Prior. She is Associate Editor for the journal *Psychology of Music*, Conference Secretary (2006–12) for the Society for Education, Music and Psychology Research (SEMPRE) and ordinary member of Council for the Royal Musical Association (RMA). She is an active cellist, pianist and conductor, performing regularly in chamber and orchestral ensembles.

Submitted: 20 December 2012