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Master Speakers, Master Gesturers A String Quartet Master Class

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Pushing McNeill's metaphor of the 'growth point', this chapter examines a string quartet 'Master Class', in which a group of professional musicians gives musical explanations and demonstrations to a student quartet, to improve both their performance and their musicality. It examines in detail the complex interplay of different expressive modalities, including talk, song, humming, playing, mime, and gesture. It further considers the intricate interaction between different participants—not only the students and professional musicians, but also the audience, the instruments, and the score itself, taken as a representational sediment of both composer and musical tradition. The chapter concludes with a plea for reexamining certain theoretical dichotomies, often appealed to in studies of interaction, in light of the emergent and deeply multimodal nature of this sort of masterful speech.

1. Master Speakers

Despite the orthodox position that the object of linguistic theorizing is a shared core of linguistic competence—abstract knowledge of language that characterizes 'ideal speaker-hearers'—in ordinary life, differential skill in using language is the norm. My first field research was to study Zinacantec musicians in highland Chiapas, Mexico, and along the way to learn about the variety of Tzotzil they spoke. That experience brought the matter strikingly home. As I was sent from one teacher to another, it was quickly obvious that certain musicians, and certain talkers, were simply better than others: everyone knew it, everyone commented on it, and even I—fledgling tenderfoot—could perceive it. By the end of my first summer in Zinacantán, I had acquired several remarkable teachers, one (shown on the left in Figure 1) a master musician, the other (in the middle) a master talker.¹ Trying to keep (or catch) up with what these masters—neither of whom, lamentably, is still *ta sba balamil* 'on the face of the earth'—tried to teach me has occupied me ever since. It is for them, along with another master

¹ The man with a red turban shown on the right turned out to be another kind of master talker, a powerful shaman who cures through prayer. The younger man was also a linguistic expert, an *ixkirvano* [< Span. *escribano*] or scribe who kept written records for the *moletik* 'elders' or senior religious officials.

speaker/teacher, David McNeill, whose ideas inform virtually all current work on gesture, that I offer this brief essay about masterful talk and gesture.



Figure 1: Zinacantec elders in 1966.

2. Master Musicians and Master Classes

As it turns out, Zinacantec musicians are *themselves* master speakers. Not only must they know the appropriate eye of songs for the many kinds of ritual event where they play, but a central part of their job is to talk: giving expert ritual advice, joking, and generally entertaining ritual participants through *fiestas* that sometimes last for four days and nights. Being a musician in Zinacantán is a matter of specialized expertise, and although it might be possible to discern a generalized 'least common denominator' for a musician's expertise, no musician is sought out for knowing only that. Zinacantec musicians do not teach their skills. In fact, Zinacantec theory counts knowing how to play music as something one *cannot* learn. It is a gift, bestowed by ancestral gods in a dream (Haviland 1967). One goes to sleep 'ignorant' one day, dreams, and wakes up ready to perform the next. There is accordingly no tradition of teaching music in Zinacantán, and almost no vocabulary for musical criticism, either of performance or technique.

At the kind invitation of Leila Falk, of the Reed College Music Department, in February 2003 I filmed a different though related sort of musical expertise in action: a string quartet 'Master Class'. The Euclid String Quartet, a young professional group, had agreed to lead a class with the Lysistrata String Quartet composed of Reed students. A long-standing interest in interaction in its various embodied forms (along with my rusty fiddler's envious curiosity) inspired me to haul multiple cameras² across the campus and to set them up in the practice room where the master class was to happen.

A musical 'Master Class' is an occasion when expertise and mastery are explicitly on display. Those master musicians who are also master teachers need

² David McNeill's invitation to participate in a multidisciplinary project from the National Science Foundation KDI program, Grant No. BCS-9930054, "Cross-Modal Analysis of Signal and Sense: Multimedia Corpora and Tools for Gesture, Speech, and Gaze Research" headed by Francis Quirk, gave me the multiple video cameras in the first place.

to be experts in both demonstrating and 'talking about' what they know. In classical music, 'master teaching' goes beyond musical fundamentals or instrumental techniques to issues of artistry, musicianship, musical tradition, and history. Multiple modes of expression are involved: minimally talk, but usually also embodied interaction between musicians, with each other and with their instruments. Looking closely at a musical master class allows us to see the multiple signaling modalities master teachers have at their disposal, how they complement each other expressively, and how they are coordinated.

3. Expressive Complementarity and the Growth Point

One of McNeill's central observations is that utterances have multiple, typically complementary expressive aspects. Still, processing demands for producing a stream of phonetic segments seem to be different, for example, from those for producing the four dimensional images characteristic of gesture. The strict co-temporality of speech and gesture, therefore, suggests cognitive connections between such different sorts of processing, captured in McNeill's metaphor of the growth point. The view licenses a search for a semiotic 'division of labor' between different co-expressive modalities, supposing that gesture and speech (among other signaling devices) might have different, characteristic, expressive virtues, though perhaps relative to differences among both languages and "gesture cultures" or traditions. McNeill's notion of a 'catchment' has further intriguing consequences, hinting that somehow the gestural modality captures and preserves semiotic configurations or perspectives over time, giving the analyst a further window onto ongoing cognition in utterance, different from but co-synchronous with that afforded by the speech stream. Both ideas suggest empirical enquiries congenial to a field anthropologist like me. Utterances in the wild may be expected to display different semiotic balances in the expressive loads of speech and gesture, and the unfolding over a stretch of turns at talk of different utterance modalities lays bare complementary aspects of conceptualization and thought. McNeill's ideas are thus an inspiration for ethnographic enquiry and observation. In a context like the master class, what IS the co-expressive relationship between different signaling modalities? Does the semiotic division of labor remain constant over time, different pedagogic moments, or even different utterances which can in some sense be seen to have similar 'meanings' or functional loads? And, to return to my starting point, is there anything distinctive about 'masterful' performances with respect to this multimodality?

Of course, the ethnographic moment is considerably messier than the controlled environment of a psychology experiment. Still, mess can be instructive. McNeill's growth point model will also ultimately have to deal with dilemmas of the following sort.

First, since utterances are normally conversational and interactive, emerging in turn sequences, they seem to reflect not an individual but rather an intersubjective and distributed kind of cognition. The trademark experience of the

anthropologist is encountering people at home, doing what they do, and usually doing it together with others. This is especially true when people talk because by and large they talk together. This is why some psycholinguists view language as an 'emergent' phenomenon arising in joint activity between interlocutors, rather than, for example, as the excrecence of individual cognitions (Clark, 1996).

Interaction is a compelling model for talk, even apparently monologic talk. Interactive 'emergence' is, however, completely undeniable in the case of chamber music. The string quartet is a paradigm example of a whole bigger than the sum of its parts. As any weekend musician knows, there are individual parts, but they don't amount to much by themselves. Rather, whatever the technical or musical challenge of a single instrumental part, it remains nothing but notes without the other three parts. Interestingly, musical master classes take pains to bring this point home. 'Mastery' in string quartet playing is partly grasping the big picture while playing in one's own little corner. If this is part of the musicianship a master class is concerned with, such a class is a good place to observe how one can talk (or otherwise communicate) about joint action, coordination, and emergence. The appropriate metalanguage—for talking precisely about interaction and emergence—is unavoidably marshaled to the occasion, even if it must be invented on the spot. One of my interests in these classes is how the interactants create appropriate representational metalanguages, in this specific context, for the 'emergence' of something organic that goes beyond individual action.

Second, the interactive and emergent nature of the string quartet master class produces other complications to the monadic growth point model. An important factor is the independent role of the body, which acts not only as semiotic signaling vehicle but as a primary instrument of action (and invention) in the context of a string quartet. Musicians' bodies and their instruments interact directly to produce the music, the primary stuff of performance and the essential target of criticism. Similarly, as part of teaching master musicians talk, but they also play—demonstrating their expertise with full performance, or with variously reduced surrogates of performance, from mime to song. Corporeal expression is thus not limited to the imagistic expressions of the putative semantic or cognitive kernel of utterance; the body has a direct generative role in what is to be communicated. Insofar as music is produced through interaction with others and with objects, and involves non-speech sound, the raw materials of the 'lived environment' in which a musical master class takes place are especially rich and significant for understanding the communicative process.

A third complication in the material I shall present is the presence in the master class of at least one extra virtual participant: the composer, embodied in this context by the written musical score. The notes on the written page are one representation of the 'music', taken as an expression of the composer's intentions. Musical tradition, history, and lore surrounding a composer's opus also emerge during the master class, and represent a further interactive axis against which performance is evaluated and around which utterances are constructed.

In the McNeill model as I understand it, the 'growth point' is taken as the dynamic cognitive kernel or wellspring which energizes different partial representations in various semiotic channels: the words have certain communicative virtues, the gestures others. The representations that emerge in the string quartet master class are especially complex: interactively produced, serendipitously constructed from a rich range of raw materials that include words, gestures, performance, and varying combinations of all these, together with the instruments, their sounds, the score itself (both as physical artifact and as virtual notation), and so on, all in interaction with the immediate environment, both social and physical. The master class is thus a useful test bed to examine the semiotic division of labor predicted by the McNeill model, over a complex sequence of communicative acts, collaboratively enunciated by different actors, and with a rich palette of expressive media. In particular, I think that examples like those in this essay provide strong, and perhaps unexpected confirmation for one of—for me—McNeill's leading ideas: that gesture provides a rich window onto the mind. For insofar as the master teachers on display here are extemporizing their lessons, working out interactively and in the moment what they want to convey and how to do it, the evanescent marshalling of one communicative device on top of another gives clear if indirect insight into how their minds work.

I start with utterances from the master class whose form seems congenial to the growth point model—a clear and complementary division of labor between spoken and gestured communicative tracks—and move through others where the semiotic division of expressive labor seems more varied, less temporally coherent, and linked in more complex ways to the physical and interactive surround.

4. The Concept of 'Octave Balance'

Consider how the professional cellist introduces a concept she calls 'octave balance.' She is commenting on the student performance of the first movement of Mozart's string quartet #23 in F, K. 590. (See example 1.) The issue is the relative volume of the different instruments. Since the teacher is herself a cellist, not surprisingly she emphasizes the special responsibility of the cello to provide a strong foundation in the lowest octave when several instruments are playing the same notes in different octaves. (There is a historical moral here, as well, since this particular quartet—known in the tradition as the third of the 'King of Prussia' or 'cello' quartets—was commissioned by Friedrich Wilhelm II, himself a, "better than average," cellist. So, as the professional cellist comments to her student counterpart, "You are the King of Prussia.") The concept of 'octave balance' is expressed concisely in the speaker's words: "if you're all playing the same melody, but in different octaves . . . the heart of it is the lowest octave."

(1) Octave balance³

- 7 c; if you're all playing the same melody=
 a. both hands come together, clasped down
 in front of body (see Figure 2a)
 b c d e.....
- 9 c; = but in different octaves
 b. Hands start to separate
 c. L coming up, R point down
 d. L rises still higher (see Figure 2b)
 e. B retreat to rest
- 10 the most .
 f. both hands rise clasped
 g h i j
- 11 y'know the hEART of it . is the lOwest octave .
 g. clasped hands beat downwards
 h, i, j. further clasped hand beats



Figure 2a/b Octave balance.

The speaker makes graphic use of gestures, as well, and they seem to illustrate a particular conception of the musical relationships involved: her hands are clasped (Figure 2a) as she talks about different instruments playing the same melody, and then held apart with a vertical interval between them (Figure 2b) as she talks about playing in, "different octaves." The spatial representation of an octave, perhaps modeled on the graphic representation of standard musical notation in the score, is clearer still as she repeats her point about octave balance (in fragment 2): "if you're playing in octaves, the lowest line will lead it." As she says, "octave" in the phrase, "the lowest part of an octave," her hands seem to depict four quick steps (Figure 3), again suggesting how the eight notes of an octave are separated by four lines on the staff. The gestures, that is, seem to give evidence about a mental representation of a musical relationship, the 'octave' named in words and in gesture modeled apparently on a traditional graphic or

³ Because of the complexity of the illustrative materials I have transcribed the video with the following conventions. Each line of text (and sometimes music played) is shown in Courier type in numbered lines. Above these lines, synchronized with the accompanying words, are small letters indicating some phase of bodily action, which is then described in words, in sans serif type, in lines keyed to the letters that follow the transcribed speech. I have also illustrated some actions in figures. Video clips of the relevant segments will be available online.

visual representation (see Figure 4, which shows the opening bars of this Mozart quartet, the violins and viola in unison, and the cello in a lower octave).

With no explicit evidence (I did not actually debrief the musicians after the filming), one might speculate that this highly trained musical expert understands the concept of 'octave balance' in ways similarly complementary to the different ways she expresses it: as a propositional statement of relationships between named concepts, as a visual image, and presumably also as a musical relationship expressed in sound, if not as well in her embodied experience as a performer. Gestural and verbal channels capture complementary, though interlocked, aspects of such a multimodal gestalt.

(2) "Octaves"

- a....
- 17 the lowest part .
 b....c..d..e...
- 18 o-of . an octave
f.....g
- 19 if you're playing in octaves
h.....i.....j..
- 20 or unison . the lOwest line will lead it
 a. both hands up with palms up, splayed cupped fingers
 b. LH under facing up, RH down over
 c-d-e. RH moves out in 3 short steps ('scale, octaves', see Figure 3)
 f. hands held horizontally to show octave interval,
 g. slight shake
 h. RH, above, moves slightly forward ('unison')
 i. one beat, and RH draws back to grasp LH ('lowest')
 j. slight shake on 'lead'

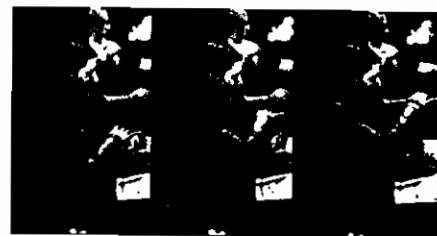


Figure 3: "an octave"

Allegro moderato.

Violino I.

Violino II.

Viola.

Violoncello.

Figure 4: Octave balance.

In the ensuing talk, still about the relative balance between the instruments, the tight semantic coordination between word and gesture changes to what seems another characteristic pattern. Speakers frequently encode in gesture aspects of their 'messages' that find little or only partial expression in speech. The first violinist, in this case, takes up the question of how different instruments must assume responsibilities as the balance between parts changes. Just before he says to the student violist that she must, "play more," he demonstrates, in gesture, *how* she must play "more": by playing stronger, more loudly.

(3) Fist

-a.....b c.....d
 41 but you need to play . much much more
 a. fingers retract to a fist, shaken out once
 b. and twice, then held
 c. then shaken out again
 d. and again lower, and held



Figure 5: "Play much much more"

His fist, formed exactly when he says, "play," (Figure 5) seems to fill out his words with unspoken gestural imagery. (And it is a corporeal image, a kind of proto emblem, which he uses again—see Figure 27, below.)

More complex gestural semiosis is evident as he continues his exhortation to the violist, whose playing he apparently has found overly timid. Gesture has indexical immediacy largely denied to words (one reason spoken deictics often receive gestural 'supplementation'—"give me *that!*" with an accompanying pointing gesture). Therefore, it is unsurprising that as he speaks to the violist he also gestures toward her, first with an open hand and extended fingers at (b) in example (4), line 30. (See Figure 6) He indexes his co-present interlocutor to identify her with the hypothetical violist in his spoken scenario. As he repairs his utterance in line 31, he again points to the violist, gesturally projecting the abstract 'viola' he mentions in words onto the student viola player he indexes in the interactive environment. His gestural deixis is what we might call 'semi-transposed' as it coordinates two quite distinct referential planes: the *viola part* in the abstract or Platonic quartet and the physically eo-present performer.

(4) Indirect deixis

- a.....b.....
 30 then the violist-
c.....d.....e
 31 the viola becomes the bass line=
 a. LH rises
 b. points with open palm out to viola player, smile
 c. 2nd point to viola, smiling
 d. hand sweeps down to left and low
 e. retracts to adjust glasses



Figure 6: "The violist..."

5. Mime, Song, and Score: "Little Accents"

Fundamentally different semiotic modes are evident in another part of the class, when the second violinist begins to talk about rhythm and accent in the students' Mozart performance, citing a passage of which part appears in Figure 7. Here the 2nd violin and viola play little off-beat eighth notes against the cello's bass foundation on the downbeat. The master teachers want to inject a bit of life here, since the students have tended to play their parts as mere accompaniment to the 1st violin's melody. Each of the instrumentalists suggests ways his or her student counterpart can achieve the desired effect, and the professional 2nd violinist combines mime, gesture, vocalization, and musical notation.



Figure 7: Score for "little accents"

First he mimes the kind of playing that he does NOT want, by 'playing' the 2nd violin's eighth notes in the air—no instrument, just hand positions and arm movements—while at the same time pretending to look around in a bored and distracted way, as if paying little attention to the music. (See Figure 8a')

⁴ The afternoon sun was shining in the window, which accounts for the white blob across his face



Figure 8a/b/c: Mimed distracted playing, little accents.

Instead, he suggests, the ‘accompaniment’ part is very important. He provides further images to show how it ought to be played. (See transcript 4.) First he combines the verbal expression “little accents” with a gesture (at lines 7 & 8—see Figure 8b) that appears to capture the standard graphic representation for accents in musical notation: little dots written above each note on the score.

(5) “Little accents”

- a.... .b....c..
7. imagine that there are .
 a. RH hand up, fingers bunched
 b. pushes out once to front
 c. and quickly pushes a second time
 a.....b.....c..d..e.....
8. little . accents on every one of those notes
 a. RH with bunched fingers darts out once
 b. and again
 c,d,e. and quickly out in 3 stages as shown
 a....
9. P P P P P P P . P P P P P P P
 a. little peck with the fingers on each vocalization
 in each group of 7, constantly moving farther forward

He goes on (in line 9) to demonstrate how the result would sound, producing a tiny vocalization for each of the notes, i.e., half singing a couple of sample measures, while at the same time illustrating the accents with a further thrust of his bunched fingers. (See Figure 8c.) He thus combines several radically different but complementary modes of signification: the words (“accents on each note”), an embodied mimed performance, the graphical musical notation, both indexed and symbolized in gesture, and a spoken simulacrum of the resulting musical performance. Such ‘multimodal’ representation turns out to be a central device in the virtuoso teaching repertoire of these master musicians.

in the picture, for which I as cameraman apologize.

6. The Body and the Instrument

Since the social setting of the class involves a range of different kinds of participants, utterances are presumably designed in some sense for all of them—from the active musicians to the observing teachers and students (and perhaps for me, the filming ethnographer). The composer is as I have commented virtually co-present, as well, embodied in the score and its associated lore. The musical instruments themselves are also participants, with their own expressive resources and interactive virtues. Because the instruments are operated by the playing body of musicians, the body and its techniques are prominent in the master class. Indeed, the body itself provides a repertoire of expressive resources which are variously incorporated into utterances. The instruments, too, have parts and associated techniques which can be emancipated or ritualized in an ethological sense—dissociated from actual playing and turned into signs. Finally, since music is sound, sonic surrogates can also be incorporated into the master musician’s expressive arsenal.

I turn now to an extended examination of a part of the class that artfully combines these multiple semiotic affordances. We can see them in action in the ‘demonstration’ that accompanies what we might call a ‘metapragmatic presentational’ (Lucy, 1993) by the master viola player. Unable to restrain himself after the student quartet’s performance, he jumps up, instrument in hand, and begins a remarkable teaching sequence that combines spoken explanation, demonstration playing, co-playing, mime, song, gesture of various kinds, and even physical manipulation of the score, the students’ bodies, and their instruments. He starts by contrasting how the students are playing the opening bars of the Mozart quartet with how he thinks they should go. (Refer again to Figure 4.) He uses two variants of the standard American speech verb ‘to go’ or ‘to be all’ to contrast what the students are, “doing” (see example 6, lines 3-4)—which he vocalizes, with a few illustrative beats of his hands, and whose rhythm he characterizes in words (lines 5-6)—showing how instead, “it should be all...,” with an accompanying demonstration (lines 7-8) that involves exaggerated singing.

(6) “It should be all ...”

- a.
- 3 you guys are doing
 a. RH held palm inward, fingers vibrate, rotate (Figure 9a)



Figure 9a/b/c: "You guys are doing...."

- b c d
 4 da:h . ba ba bum pa ba pa pa
 b. RH slightly away from body, still
 c, d etc. RH and LH with fiddle beat down sharply (Figure 9b)

The violist uses his body much the way an orchestral conductor might (see Braem & Braem 1998; and below) to suggest both dynamics and rhythm in the performance he is representing vocally.

- a.....b.....c
 5 it sounds like four- mm-
 a. RH starts up, index finger extends
 b. to highest position at R shoulder
 c. slashes down and in
 d.....e.....f
 6 even louder . than the downbeat
 d. RH points to violist
 e. beats downward once (Figure 9c)
 f. hand dropped out to right, with palm up

He explains that the students seem to have emphasized the downward *arpeggio* at the end of the measure more than the strong initial note at its beginning, illustrating 'downbeat' with a downward pointing gesture (and perhaps also affiliating himself with the student viola player by pointing at her).

- a.....b.....c
 7 and it should be all
 a. RH curls in to body,
 b. palm facing in
 c. and vibrates slightly as head shakes side to side
 a.....b.....c
 8 ta:m ba pa pa pa pa pa bum
 a. RH out, fingers curled in
 b. RH snakes out beat by beat, as he leans forward, singing
 c. RH sweeps up at end of phrase

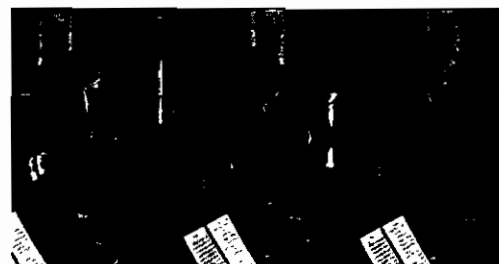


Figure 10: "It should be all ..."

Finally, in his demonstration of how the passage should go, he illustrates in dramatic singing the emphasis and dynamics he has in mind. He further inflects this vocal performance with a reaching gesture—a kind of diagrammatic sweep of the arm (see Figure 10). The hand and arm together index each note in a progression of steps outward from his body, and also symbolically echo the expressive attitudes of an operatic singer.⁵ (Note the little flourish of his hand in the last frame of Figure 10.) He thus concatenates a partial verbal characterization of the music onto a virtual performance of the passage, transposed, as it were, from one musical idiom (string quartet playing) to another (song).

7. The Syntax(es) of Multimodality

The Euclid viola player was a true virtuoso of the multimodal sign. One of the most striking features of his utterances as he teaches is the nearly seamless flow between one modality (or combination of modalities) and another. His performance also blurs the boundaries between some of the standard categories in gestural typology—an issue to which I return at the end of this essay. For example, the possibility of integrating real musical performance into utterance conjures a phenomenon akin to the Geertzian wink: what distinguishes 'real' playing from, say, exaggerated playing, or practice playing—rehearsing or 'trying out'—and then again from mimed playing (which shares some aspects—more or less exact body movements, for example—with the real thing) or gestures which in more or less stylized ways mirror playing? This master teacher combines all of these and more.

Consider the following complex sequence, which involves diverse interactions between the musician's body, his instrument, and the musical score. The problem at hand is exactly how to organize the use of the bow—always an issue in string technique—in the initial Mozart passage. All four instruments are playing in unison, here, and so the teacher is trying to work out a common bowing solution. To 'work out' involves actually experimenting with the instrument, so he begins with the exact notes to be played, read off the score. He then 'exhibits

⁵ At another point in this striking sequence he explicitly likens the way the passage should be played to how Pavarotti might sing it.

thinking' (with eyes turned upward—see Figure 12) as he simultaneously seems to imagine physically what the bow motion he proposes would feel like. (Note that he holds the real bow in his right hand and moves it against the outstretched index figure of his left, which represents a virtual viola string.) He imagines first a downbow motion (from the 'frog' or bottom end of the bow where he holds it and moving it downward toward the tip) at lines 12 and 13 (where he mimics the same downbow motion in gesture at *a*), and then, when he lifts the instrument to his chin to play, he imagines instead the opposite upbow movement (as he says at line 14, having already placed the tip of his bow on the viola at *c*). This is how he starts when he plays at line 15: a long upbow for the first *piano* measure, and then a strong downbow for the first *forte* note of the 2nd measure. (Figure 11 shows just the first violin part.)



Figure 11: Mozart opening (1st violin part only).

(7) Explaining through trying

- a.
- 11 I would suggest .
- a. turns head to left, looks down to score
- 12 try down-



Figure 12: "Try..."

- a...
- 13 try- . .
- ...b
- c
- 14 try starting out on . upbow
- a. RH with bow starts out on downbow motion
- b. lifts instrument to chin
- 15 ((plays from music))
- c. moves bow to tip for upbow (Figure 13a)



Figure 13a/b/c: "Upbow..."

Apparently satisfied with the result, he now repeats the motion of the upbow, further qualifying it in words at line 16 ("very light") and producing a light inbreath through pursed lips, simulating both the, "light," sound and perhaps also the anticipatory tension of the note via the inbreath.⁶

- a.....b.... c
- 16 very light . on the upbow
- a. drops instrument from chin
- b. begins upbow motion with bowhand, looking down at hand (Figure 13b)
- c. whistling mouth

He now repeats the performance, first miming the bowing he wants (at 17 *a-b*), and then playing it while first humming (17 *d*) and then saying, "here," (18 *a*) at the transition to the strong downbow in the second measure (18 *b*).

- a.....b.. c..... d..
- 17 almost like . seamless on the mm..
- a. bows up
- b. bows down (without playing)
- c. lifts instrument to chin and
- d. plays upbow
- ((Plays))
- a.....b
- 18 he:re ((playing))
- a. plays upbow (Figure 13c)
- b. starts strong downbow playing phrase

Once more he plays the phrase, with the desired bowing and dynamics (line 19), and then he switches modalities: he passes the bow swiftly to his left hand, and uses the empty right hand first to show a bunched fist ("strong"? at line 20 *a*—see Figure 21), then to mimic the downbow motion—but without actually holding the bow, thus a kind of stylized mime—at 20*b*, and finally anticipating the following

⁶ At another point he suggests actually using an inbreath on a silent downbeat to help the energy of playing a subsequent offbeat note.

series of short up and down bows for the sixteenth notes in measure two with a small movement of his hand (20c).

- a....b
19 and then ((plays))
a. rapid upbow to get in position
b. strong downbow, playing
a.....b.....c
20 very- very- strong the downbow
a. frees RH from bow (now held in LH), shakes hand with upward cupped fingers (Figure 14)
b. drops RH to low position
c. mimics wrist movement of short upbow



Figure 14: "Very strong..."

He now turns his full attention to the second measure, singing the notes again and miming the bowing motion he has almost experimentally proposed: a long hard downbow for the first long note (21e), and then a single smooth upbow for the sixteenth notes he sings (at 21f).

- e.....f.....g
21 taaah: di da da da and-
e. long down bow motion w. RH (Figure 15a.)
f. smooth upbow motion w. RH
g. RH stops movement, lifts palm out fingers out



Figure 15a/b/c: "Taa did a..."

Here he encounters another problem, namely the transition between the long and loud initial note of the 2nd measure, and the quick run of sixteenth notes that follows. He wants this transition to be smoother than what he has heard in the student performance, which he goes on to mimic in his 'conductor' whole body style (line 23), showing the unwanted slight break between long note and short notes (see Figure 23, and line 23b).

- a.....b.....c.....d....e
22 very . sh:ort not so much break
a-b. two downward strokes (Figure 15b.)
c-e. small downward beats with RH
a...b...c.....d
23 not ta:m hhh. di ta ta ta ta ta
a. small downbow
b. whole body shifts, both hands up (Figure 15c.)
c. RH beats downward with notes
d. suddenly turns head to L to consult score

Here he seeks experiential confirmation, again turning to the score to play more of the passage even as he continues to talk (24b).

- a b...
24 actually, hold on, let me se(ee:)
a. lifts instrument to chin, looking at score (Figure 16.)
b. starts to sing as he enunciates 'see'
25 ((Plays))



Figure 16: "Actually, hold on..."

It is in the sequence that follows (example 8) that the line not just between real and mimed playing, but also between mime and gesture begins to blur. The viola player has played the passage for himself and decided that the first measure should be played with a light upbow, followed by a strong downbow for the beginning of the second measure; but instead of drawing the bow all the way to the tip he wants the students to save enough bow to be able to play the run of short 16th notes right in the middle of the bow, where they have greater control and strength. After playing the two long notes again (line 28) he turns the bow into a diagram of itself: he points to where he wants the students to move on the bow—"all the way to the frog," on the upbow (29b and again 30a-b, see Figure 17).

(8) Mime *versus* gesture

- 28 ((Plays first measure and a half on upbow and downbow))
 a.....b
 29 try to go all the way-
 a. swiftly drops instrument
 b. with index finger of LH (holding viola) points to frog of bow in RH
 a.....b.....
 30 if you could . try to go all the way to the frog
 a. touches bow low with LH index finger
 b. draws finger from mid bow down the bow toward frog



Figure 17: "If you could try to go all the way to the frog."

Now he does something semiotically more complex. He mimes the downbow motion against an outstretched finger—again a virtual viola string—and enjoins the students to, "save it," i.e., not use the whole bow length on the strong downbow note (Figure 18). This is, "so you can..." (line 31c)—but what they 'can' do is neither played nor stated, but demonstrated with a sung line (32) and a simultaneous gestured demonstration (Figure 19) that involves the bow as a symbol of itself, moving against a gestured virtual string (line 32a-c).

- a.....b.....c
 31 and .. save it so you can .
 a. LH index finger marks spot like fiddle
 b. RH slowly draws bow down against L index finger
 c. quick movement with bow hand, quickly back to middle of bow against index finger



Figure 18: "And save it .."

- a...b...c....
 32 da ta ta ta ta ta tay
 a-etc. mimes quick up and down bowing



Figure 19: (Mimes bowing).

The bowing solution is now conceptually complete, but it remains for this master teacher to try to implement it with his students. He wants them to try it out, and in the process he wants both to refine the solution and to justify it. When the students' first attempt fails (because they still end up too high on the bow for the 16th notes), he steps in (example 9) to offer a slight modification: start the upbow not at the tip but only midway up the bow. (See Figure 20a.)

(9) The treachery of the bow

- a.....b
 51 well . maybe from here
 a. moving bow up to position
 b. holds it at mid bow (Figure 20a.)
 52 ((plays))
 53 so you have-
 a.....
 54 you know
 b.....c
 55 less possibility to be:
 a. turns gaze rapidly to 1st violinist
 b. looks at bow moving to viola
 c. positions bow at extreme tip (Figure 20b.)



Figure 20a/b/c: Awkwardness at the tip of the bow

- 56 ((plays badly at the tip))

- a...
57 (to get)- in trouble at the tip ok?
a. rapidly drops fiddle from chin

He now has recourse to two further 'multimodal' resources. One is a different kind of demonstration: how not to play. Thus at line 55c (Figure 20c) he positions his own bow on the viola at the extreme tip and demonstrates awkward playing of the 16th notes from that position (line 56). He goes on to demonstrate, again in ever more stylized ways, the correct bowing again: first the upbow (at 59a with his bow in his hand but not playing) and then the downbow (now without the bow, just moving his hand, at line 59c).

- 58 so- ..
a..... b.....c.....
59 make sure you- you travel and uh- .
a. moves RH out and up as if bowing
b. puts bow in LH
c. moves RH like smooth downbow



Figure 21: "I would start here."

Finally, he actually picks up the 2nd violinist's bow, at 61a, even as she holds it (see Figure 21), and moves it to exactly where he thinks she should start.

- a...
60 maybe-
a.....b.....c
61 I would start . even . around here .
a. reaches out and takes 2nd violinist's bow
b. moves it up to middle position
c. and drops it on her string there

The violist offers one final explanation for why he has spent such a long time on bowing. My interest here is the intercalation of word and various kinds of movement, a complex choreography of spoken deictics and gesturally elided grammar. (See example 10.) He returns to the bowing solution: "the reason to do that," he says (lines 79-80) is, "so that you can..." (line 81), where the complement clause to 'can' is supplied by a musical demonstration (line 82).

(10) More complex deixis

- a...b...
79 you do this-
c.....d.....e
80 the reason to do that . is .
a. RH holding bow, index finger pointing
b. second beat down
c. swift point to self? (Figure 22a.)
d. body bends down and hand down
e. RH lifted, index finger up (Figure 22b.)



Figure 22a/b: "The reason to do that"

- a b.....c
81 is . so that you can um- .
a. points out with RH and bow
b. retracts, starts to place instrument
c. under chin (Figure 23a.)
82 ((plays))



Figure 23a/b/c: "So that you can ..."

However, he cuts short the performance (at line 83), utters another deictic, "this" (line 84, Figure 23b), then continues to play the phrase. He annotates the played phrase with words ("a comfortable place here," line 86b, Figure 23c) before finishing it the way he wants to demonstrate in line 87.

- 83 ((short downbow cut off))
84 this-
a.....
85 to be: ((plays down))
a. starts playing as he finishes saying, "be"

- a. . . .b.....
 86 in a comfortable place here
 a. still playing as he talks (Figure 23c.)
 b. holds bow still where he stopped playing
 87 ((plays down scale))

Once again he offers a contrast—how NOT to play the phrase—and once again the spoken deictics index a musical demonstration. If you have ended up at the tip of the bow (Figure 24), the sequence of fast notes will be impossible (“it won’t work,” line 91).

- a.....
 88 if you’re here
 a. holds bow in place at 3/4 length
 89 ((plays))



Figure 24: “If you’re here...”

- a
 90 ((plays short notes))
 a. shakes head
 a b
 91 it won’t work . . .
 a-b. shakes head side to side

8. Conducting

The body, the instrument, the voice, and the words of these musicians all combine to do the complex semiotic work required in a musical master class. There is little doubt that these somewhat stylized communicative skills are the product of years of musical training that involves both an intimate bodily connection with one’s instrument and an immersion in techniques of listening to and producing sound, in talking and hearing about music, and of playing and otherwise experiencing it. Some of these techniques are shared in a musical tradition (a ‘culture’)—for example, many are shared with orchestral conductors—and others are individual and idiosyncratic.

When the students end the class with a second run through the first movement of the Borodin String Quartet #2, each master teacher displays seemingly characteristic styles of ‘leading’ or gesturally commenting on the performance. The 2nd violinist has already characterized this movement as,

“almost literally musical fireworks,” using hand gestures (fireworks exploding, see Figure 25a) to illustrate his metaphor, and never touching his instrument.

As the students launch into the Borodin, he continues to use the same hand gestures to try to breathe some fire into their performance (Figure 25b/c).



Figure 25a/b/c: “Musical fireworks”: The second violinist.

The cellist tended in her comments to work from the score, singing along and conducting with her bow, sometimes demonstrating on her instrument—and this is precisely what she does when the students play (Figure 26).



Figure 26: The cellist and the score.

The first violinist concentrates on force and rhythm, using ‘strong’ gestures, pounding fists, and clapping hands (Figure 27).

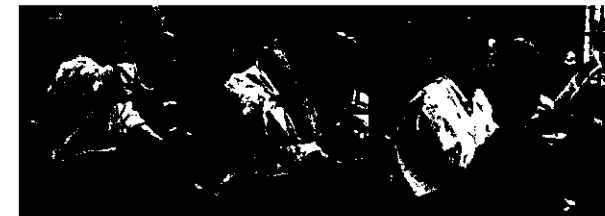


Figure 27: The first violinist

Finally, the violist is, as we have seen, a highly ‘embodied’ teacher. He mimes along with the student musicians, emulating and conducting their bowing (Figure 28).

Figure 28: *Bowing.*

When the Borodin starts, he is again unable to restrain himself, pumping his hand to pull the students into a stronger rhythm, then jumping from his chair, viola in hand, to play along (Figure 29).

Figure 29: *The violist jumps up*

9. Conclusion: Dubious Dichotomies

I began with master musicians and master speakers, and a general curiosity about what makes masters masterful. Thinking that part of mastery might be located in skillful marshalling of complementary expressive modes and resources, and inspired by the 'growth point' metaphor, explicitly extended to coordinated multi-person collaborative interaction, I presented fragments of a string quartet master class. These gradually introduce ever more intricate combinations of expressive resources, from talk, to singing, from playing, to gesturing. They demonstrate the performative equivalent of 'intertextuality', except that here the interrelated 'texts' range from verbalizations to full musical performances, from musical technique and tradition to musical scores. The master musicians also give new meaning to the oft-used notion of 'embodiment' since musicians' bodies (and their instruments) become at once vehicles of performance and meta-performance,

means for making music and for communicating about music, again in a characteristic and theoretically instructive way.

Let me summarize what I take to be the main lessons by taking a few potshots at some frequently used but dubious theoretical distinctions frequent in analysis of discourse, especially by those who pay scant attention to embodied interaction. If we look carefully at events like the Master Class, many of the facile dichotomies that are often employed in analyzing (talk in) interaction begin to lose their appeal. Here are some of my favorite targets, and I hope the material I have presented will illustrate at least some of the reasons why.

Gesture versus speech

There are simply too many 'modes' of signaling available to the participants in a master class for such a simple opposition to have much purchase. Talk easily fades into singing, and singing into humming. Playing moves to aped playing, or mimed playing, or movement that suggests playing, or a stylized movement that recalls (thus symbolizes) a movement introduced to suggest playing. Normal typologies of gesture lose their discrete categories, and the supposed hierarchical orderings between them become muddled. What is 'tied to verbal utterance' or 'language-like' or 'conventionalized' or indexical of speech content vs. speech rhythm becomes increasingly hard to decide. Similarly, the criterion of interdependence between speech and gesture becomes confused: in material we have seen, a speaker can substitute a played passage, or a gestured performance, for whole clauses; yet such movement sequences can hardly be counted as emblems or "quotable."

'Literal' versus some other sort(s) of meaning

In linguistic semantics one often assumes, as a kind of methodological scimitar, that lexical items come with 'literal' or 'basic' or 'nuclear' meanings, which may be pushed out of shape, extended, distorted, even reversed on 'occasions of use'. Useful as such a principle of parsimony may be, it is hard to enforce 'in the field' where eliminating the contextual pushings and shovings on any single expression (to find the underlying commonality of literal meaning) may be very hard to do. This is one of the problems of situated observation, and it is one of the reasons psychologists despair of ever learning anything scientific from ethnographers. The expressive vocabulary of these master teachers seems to rely less on a prefabricated lexicon of 'literal meanings' and more on malleable techniques for pulling concepts (think of 'octave balance') from their natural musical homes into expressive domains that are of a different, non-musical order.

Monads versus interactants

Who are these people we are trying to understand, anyway? Who are the participants, even in the Master Class? There are eight string players immediately involved, along with teachers, other students, and observers. But none of these comes in discrete units, even though their bodies may look that way. They interact

in different conglomerates; they have identities that shift and realign themselves; and there are invisible participants (themselves also not monadic)—the composers, the patrons who commissioned the works, among others. Though I have made rather little of it here, there is a parallel between the teaching of this quartet of master musicians and a 'co-narration'—because when there are co-narrators, who is 'the narrator'? The teachers here, trying to produce a quartet from 4 instrumentalists, mimic their music in their teaching, each playing his or her own part and trying to produce something that goes beyond any single part. I suspect that all interaction is a little like that.

Cognition *versus* embodiment

Are representations in the mind or in the body? These musicians seem to *produce* their ideas as much with their bodies as with any other cognitive organs. In such a case separating the ideational from the embodied begins to seem not only more than usually problematic methodologically, but also analytically unattractive if not untenable.

Mental image *versus* emergent unfolding of expression

Finally, observing the Master Class raises a slightly deeper problem: not just whether one has ideas in the mind or, as it were, in the body, but whether one *has* ideas at all, or whether they somehow 'emerge' in the course of semi-planned or extemporized socially contextualized interactive utterance. My late colleague Derek Freeman once remarked that the film he most wanted to see was, "of someone changing his mind." Although the master violist may not have actually 'changed his mind' about anything in the course of the fragments I have presented, he has, at least, appeared to change expressive modal horses in mid stream. In the master class we seem to see 'emergent cognitive unfolding' all the time, as the teachers search around for ways to give what are evidently sometimes inchoate impressions of the students' performances, or as they generate new ideas and suggestions about how to improve it, an expressive form in the very moment of expression. The resources for doing so are inherently 'multimodal', here, and I suspect, in general, as different expressive resources suggest or present themselves on the fly. The virtue of looking at master musicians, as well as at master speakers, is that we cannot easily idealize this multimodality away.

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Constructing Spatial Conceptualizations from Limited Input Evidence from Norwegian Sign Language

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Natural sign languages contain sets of signs that must be directed toward things as a normal and expected part of their production. The Norwegian Sign Language (NSL) possessive pronoun POSS^{NSL}, for example, meaning 'his', 'her', or 'its' must be directed toward the physically present possessor. If not physically present, the possessor will be conceptualized as present. As a result of this conceptualization, POSS^{NSL} can meet its grammatical requirement to be directed toward the possessor by being directed toward the conceptualized-as-present possessor. In order to understand the signer's message the addressee must form spatial conceptualizations like those of the signer. However, the information signers provide addressees to guide them in the construction of spatial conceptualizations is sometimes quite limited. We explore how minimal clues can lead to the construction of elaborate spatial conceptualizations and how smoothly and easily the signer moves from one spatial representation to the next.

1. Introduction

William Stokoe was the first to argue that American Sign Language was a real language, equivalent structurally and expressively to vocally produced languages. Prior to Stokoe (1960) sign languages were regarded as 'merely gestures', not equivalent to and more 'primitive' than vocally produced languages. In the 1970s linguists continued arguing for the status of sign languages as real languages. The examination of numerous sign languages revealed that their grammars show great structural and conceptual similarities to the grammars of vocally produced languages. For example, both spoken and signed languages have extensive lexical inventories. Both types of languages have grammatical mechanisms for creating morphologically complex words. Both have grammatical means of combining words/signs into larger syntactic constructions. The

* We give our thanks to Hege Lønning, Lise Marie Nyberg, Tommy Riise, Odd-Inge Schröder, and Line Sienseth for helpful discussions of the video narrative we examine in this paper and to Kari-Anne Selvik for her comments on an earlier draft of the chapter.

Gesture Studies (GS)

Gesture Studies aims to publish book-length publications on all aspects of gesture. These include, for instance, the relationship between gesture and speech; the role gesture may play social interaction; gesture and cognition; the development of gesture in children; the processes by which spontaneously created gestures may become transformed into codified forms; the relationship between gesture and sign; biological studies of gesture, including the place of gesture in language evolution; gesture in human-machine interaction. Volumes in this peer-reviewed series may be collective volumes, monographs, and reference books, in the English language.

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University of Connecticut - Stamford

John Benjamins Publishing Company

Amsterdam / Philadelphia