Metagesture*
An Analysis of Theoretical Discourse about Multimodal Language

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This chapter explores a particular gesture characteristically produced by David McNeill, a major figure in the world of multimodal language research. While the primary purpose of the analysis is an affectionate tribute to this great thinker, the phenomenon discussed gives rise to questions which are of general interest. I claim that this gesture is an example of a *speaker-specific gesture*. I argue that such gestures can be distinguished from representational gestures and emblems because they are neither conventional nor wholly spontaneous. The psychological processes by which they are generated are thus worthy of attention.

1. Introduction

When I tell people that I study gesture, they often express concern that I will plumb the depths of their souls by observing their hands. In reality—and I think I am not unusual among gesture researchers in this respect—I am typically not any more attentive to my interlocutor's gestures than someone who is not a student of multimodal language. I must confess, however, that in the case of my former advisor, David McNeill, I am guilty of covert observation. Having been fortunate enough to spend a considerable amount of time listening to David talk, I became aware of a gesture form that tended to recur in his discourse. I will refer to this form as the 'growth point gesture'—a label to be justified shortly. In this chapter, I provide a semiotic analysis of the gesture and discuss the implications of such forms for our understanding of conventionality in gesture production.

The growth point gesture involves two hands with fingers cupped, one positioned slightly further from the body than the other, as shown in Figure 1. The top hand (the right hand in the figure) is oriented with the palm facing away from the body, while the palm of the bottom hand faces towards the body. The gesture is sometimes held while superimposed beats are performed and may be followed by a gesture in which the top hand moves towards and away from the bottom hand. This gesture is sometimes followed by a 'presenting' gesture, in which both hands move towards the interlocutor with the palms up as though offering an object for inspection. This paper addresses two questions. I first ask whether the

* I thank Susan Duncan for supplying the data used in this analysis.

growth point gesture occurs with the same meaning in different contexts. I next take up the question of the status of this form. It is an idiosyncratic gesture, but appears regularly in this speaker's talk. What does the existence of such forms tell us about conventionality in multimodal language production?

Figure 1: *The growth point gesture*

2. Data

I used two samples of David's discourse for this analysis. (These were samples of convenience, but I believe them to be representative.) The first is a conference presentation given in 1995, in which David discusses the gestures hearing adults produce when asked not to speak, and compares them to the gestures of home-signing children (later published as Goldin-Meadow, McNeill, & Singleton, 1996). This sample provides fourteen minutes of data. The second is a segment from a film made by the BBC about a man who has lost his sense of proprioception (Crichton-Miller, 1998). David discusses the implications of this condition for gesture-speech integration. This sample provides three minutes of data. I found five instances of the growth point gesture in the seventeen minutes of video provided by these two samples. To be counted as an instance of the growth point gesture, a gesture had to meet the following criteria: two hands, both in spread C shape, one hand closer to the body than the other, with palm oriented away from the body, one hand further from body than the other, with palm oriented towards the body.

I first present the five examples, then discuss their significance. In the transcriptions below, the data source is identified by year, "1995" being the

presentation, "1998" being the documentary. (Timecode has been included for the 1995 examples so the reader can tell where they occur relative to each other.) Gestures occur within the bracketed speech. Peak prosodic emphasis is marked with bold text, "*" is a self-interruption, "…" is an unfilled pause. Because the form of the gesture is essentially the same for each example, I will not include video stills.

(1) He has this very well honed [synchroni**za**tion] 1 [of s* speech and **ge**sture] 2 so that both speech and gesture are [uh pre**sen**ting the meaning] 3 [to the listener at the same **time**] 4

1998. R is top hand (hand closest to body), L is bottom hand. 1 is the growth point gesture. 2 involves motion of the top hand towards and away from the bottom hand. 3 and 4 are two-handed presenting gestures.

(2) The gestures [and their **synch**ronized] 1 [speech form] 2 which might be a word or a a a a a longer stretch of speech uh…the gestures and their synchronized speech cover the same idea units.

1995: 3:10. L is top hand, R is bottom hand. 1 is the growth point gesture. In 2, R holds and L traces a rounded path over R.

(3) [They present **clo**sely related ideas] 1 [or different aspects of a **sin**gle idea] 2 [at the same **time**] 3

1995: 3:29. L is top hand, R is bottom hand. 1 is the growth point gesture. 2 involves motion of the top hand towards and away from the bottom hand, and 3 is a two-handed presenting gesture.

(4) Gestures that accompany speech are mimetic and imagistic whereas the linguistic component is analytic and provides standardized categories of experience and so by saying that [these kinds of **ges**tures] 1 [and **lan**guage] 2 [form an integrated **sys**tem] 3 we're saying that language is richer* more complex than would appear

1995: 4:35. L is top hand, R is bottom hand. 1 is the growth point gesture. In 2, R moves away from the speaker's body. In 3 the two hands come together with palms facing towards center, still in spread C shapes, and two small beats are performed timed with the two syllables of, "system."

(5) But … so … but the point is to compare these* the* kind of the uh [the most **ba**sic **pro**perties] 1 of these … [**home sign***] 2 these invented languages by children to the uh* which are gestural … to the uh the gestures of hearing adults

1995: 11:02. L is top hand, R is bottom hand. In 1 the two hands come together with palms facing towards center in spread C shapes. Two beats are performed. 2 is the growth point gesture. Two beats are performed here as well, timed with the two words.

3. The Meaning of the Growth Point Gesture

Is the meaning of the growth point gesture constant in these different examples? The first three cases suggest that the gesture occurs when David is talking about the synchronization and co-expression of the manual and vocal modalities. The two hands delimit a space in which a virtual object is contained. The virtual object is a conceptual unit comprised of speech and gesture: in other words, a growth point. This hypothesis is my basis for referring to the form as the 'growth point gesture'. In examples 1 and 3, the growth point gesture is followed by a gesture in which the top hand moves towards and away from the bottom hand. The co-occurring speech in example 3, "different aspects of a single idea," strongly suggests that the motion represents an opposition between the two modalities. I am thus hypothesizing that the motion in examples 1 and 3 represents a dialectic between the imagistic and linguistic aspects of the language system. This dialectic is an integral part of the growth point theory (McNeill & Duncan, 2000; McNeill, 2006) and is likely to be part of the speaker's conceptualization.

In the fourth example, the growth point gesture occurs with, "these kinds of gestures." By, "these," David means gestures that accompany speech and that are mimetic and imagistic. It is unclear whether meaning of the gesture in this example is the same as in examples 1-3. In example 4, the virtual object may simply be speech-accompanying gestures, rather than an idea unit composed of both speech and gesture. The distinct gesture produced along with, "language," could support such an interpretation.

The meaning of the gesture in the fifth example is somewhat unclear, as it occurs during a period of verbal dysfluency. One interpretation is that the virtual object contained within the speaker's hands is 'home sign'. This is plausible in the context of the single utterance. It is less plausible when one considers the other contexts in which this form has appeared, in conjunction with the speaker's hesitations and self-interruptions. A second possibility is that the gesture represents *speech-accompanying gestures*, but has anticipated the speech with which it might be expected to co-occur ("the gestures of hearing adults"). In other words, in planning the utterance, "the point is to compare [A and B]," the ordering of A and B has become confused, perhaps because a third piece of information needs to be included: namely, both A and B share the property of being gestural. As a result, the gesture occurring with the A element is actually coexpressive with the element that surfaces as B.

Regardless of which of the above interpretation one favors, it is clear that this particular gesture occurs in very similar discourse situations. The growth point gesture does not appear with speech about goats or yams, but with speech

about the following things: a conceptual unit comprised of speech and gesture (examples 1, 2 and 3) and speech-accompanying gestures (examples 4 and 5). Are these two meanings sufficiently different that the label 'growth point gesture' is not really justified? Given that speech-accompanying gestures are co-expressive—that is, they are the outcome of a dialectic between imagery and language—I would argue that the difference between these meanings is not enormous.

4. The Status of the Growth Point Gesture

The growth point gestures produced in examples 1 and 3 are extremely similar, despite being separated by several years. They are also nested within an identical series of gestures. These two facts suggest that the growth point gesture is relatively fixed for the speaker. Of course, the fact that David produces similar speech and gesture when talking about speech-gesture integration is not surprising. He has described this phenomenon perhaps hundreds of times, so his conceptualization of it is naturally somewhat entrenched. However, it is precisely the existence of such entrenched conceptual units that I believe warrants some attention. What exactly is the status of this recurring gesture? Does it reflect the same kind of visuospatial thinking that gives rise to other gestures?

There are, broadly speaking, two reasons why multiple gestures with the same physical form come to be produced. The first is convention. Certain kinds of gestures (often referred to as 'emblems') are akin to lexical items: they have culturally-specified forms and meanings (Kendon, 2004; McNeill, 2005). An example is the 'thumbs up' gesture in American culture, which has the general meaning of positive evaluation. It is not always easy to determine whether or not a gesture should be regarded as an emblem—this is a complex subject which cannot be adequately addressed here (but see Parrill, in press and the references therein). The growth point gesture, however, is produced by one speaker only, thus is clearly not an emblem.

Gestures with the same physical form are also produced because the imagery which gives rise to them is the same. For example, different people describing a cartoon stimulus will tend to produce similar gestures because seeing the same visual input results in the generation of similar mental imagery (McNeill, 1992, McNeill & Duncan, 2000). A single person will also produce multiple gestures with similar forms when certain imagistic content recurs at different points in a discourse. Such occurrences have been described as 'catchments' (McNeill, 2000). A catchment is a set of recurring gestural features (hand shape, motion, position). The recurrence of features is assumed to reflect recurring imagery. This imagery can be relatively concrete and linked to an external stimulus, as in the case of cartoon narrations, or can relate to more abstract, internally generated content. Tracking catchments is thought to provide insight into the organization of a speaker's discourse. Is the recurrence of the growth point gesture an instance of a catchment? This seems like a logical description for the cases that occur within a

single discourse (the four examples from the 1995 sample). The sighting of a virtually identical gesture in a different discourse, however, suggests something different. The growth point gesture appears to be an example of a third phenomenon, a *speaker-specific gesture*.

The two distinguishing features of the speaker-specific gesture are that 1) the gesture is generated on the basis of imagery, not convention, but 2) the gesture is routinized, rather than being wholly spontaneous. Such gestures warrant attention because routinization changes the nature of the language production process. If we repeat an action (such as describing a theoretical concept) we will form schemas and motor programs for that action (it will become routinized). Thus, certain images are very likely to be activated and certain motor programs very likely to be run whenever we have occasion to engage in that explanatory task—we have developed a procedure. The mechanisms on which such processes depend are complex, but a familiar example from speech might help to make the point. All speech production is routinized, of course, but further online routinization is sometimes observable when one speaker produces a sentence structure another speaker has just used. Here the assumption is that the structure has been primed—it is produced because it is more active in memory (Bock, 1986; Pickering & Garrod, 2004). As a result, the process of selecting a structure has become slightly less spontaneous for the speaker.

My evidence for the claim that the growth point gesture is routinized comes from the fact that the form of the gesture is quite similar even when speech is different. This pattern suggests that the image is the conceptual unit, not the speech-gesture package. In other words, it is not the case that David has a completely memorized spiel about gesture-speech integration. Instead, the image which is at the heart of his theory is not created spontaneously each time he describes it, but is retrieved from memory as a unit.

5. Conclusion: Some Future Explorations

Speaker-specific gestures are of interest because they represent a different point on a continuum of conventionality than the wholly conventional or wholly spontaneous gestures which prior research has focused on. Degree of conventionality is at the heart of language and language change, and is thus a topic of central importance. While elements of varying conventionality exist in speech (slang terms, idioms, constructions, etc.), the gesture considered here is an imagistic counterpart.

I wish to end with some brief comments on the potential for empirically identifying speaker-specific gestures and for testing the claims I have made about their production. I expect that these gestures occur in the discourse of most speakers. Anyone who tells the same story over and over—whether it is a narration about a past experience or a description of a theoretical construct—will streamline production in the manner described above. Some information about the changes that occur when a narration is repeatedly retold does exist (Levy &

Fowler, 2004). However, this work deals with different phenomena, and the area is, in general, under-studied. Speaker-specific gestures are likely to be particularly prevalent, and easy to identify, in discourse genres where material is prepared and familiar, such as lectures. A good starting point in understanding this phenomenon, therefore, might be to look for characteristic gestures in the lectures of a number of different people. Such an analysis should establish whether the claims made here can be generalized to other speakers.

Empirical tests of the psychological processes underlying the production of these gestures will have to await a better understanding of the phenomenon. In the meantime, I would like to suggest one indirect assessment. If, in speaking about a concept, a particular image is automatically generated and is an integral part of the explanatory process, drawing the speaker's attention to that image might perturb normal production significantly. For example, a chapter analyzing such a behavior might serve to make the speaker self-consciousness enough that his or her thinking will grind to a halt. If we see no further productive work from David McNeill, my hypotheses will be supported. While such an outcome might be undesirable for David, he can console himself with the knowledge that we have gained some insight into the nature of multimodal language.

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