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BOOK REVIEWS

Geoffrey Beattie (2003). *Visible thought. The new psychology of body language*. London: Routledge.

Reviewed by Susan D. Duncan

Introduction

Geoffrey Beattie is a psychologist who has made many contributions to experimental psycholinguistic research on speech and gesture. In recent years, much of this research has been conducted in collaboration with Heather Shovelton. Results of their research on the communicative potential of gestures are described in several chapters of *Visible Thought*. The book makes clear that Beattie is also expert in social psychological approaches to analyzing nonverbal behavior in interactions. In fact, his accomplishments extend beyond laboratory research. He is the author of several works of fiction and someone who brings scientific research to bear on issues that matter to people and organizations in the 'real world' in ways that advance agendas on both sides. This latter propensity must have been one reason he was chosen to serve as "*Big Brother* psychologist" for several seasons of that popular British television reality show. The series concerns the interactions and changing relationships within a group of people who have agreed to live together in an apartment for many weeks under constant surveillance by television cameras. Beattie's role in the series was to provide analyses and interpretations of the apartment residents' nonverbal behaviors. His observations gave viewers another angle from which to appreciate the unfolding drama and highlighted the importance of nonverbal behaviors in the residents' developing relationships. In the introduction to *Visible Thought* we are told that the motivation for the book originated in the experience of studying these data and explaining to a lay audience, week after week, the structure and significance of this domain of human behavior.

Part of the motivation was the author's sense of the value of the many accumulated hours of recorded interactions among members of the *Big Brother* household. These layered "narratives unfolding across time" (p. 4), Beattie explains, are a rich resource for the scientific study of human interaction. Beattie relates how he and the other experts employed by *Big Brother* were under

pressure from the show's producers to predict, based on their analyses, how individuals would fare in their relationships within the group over time, leading to either being 'voted off' the show or being allowed to stay on and have a chance at prize money. Over time, we are told, the segments of the series that were concerned with psychological analysis became among the most popular with the viewers. A further motivating factor for writing the book, thus, was the educational opportunity, only partially realized during the series, to bring the public conception of 'body language' more into line with advances in scientific theory achieved over recent decades. In this way, the academic's foray into popular media began a dialog with the general public on which *Visible Thought* now builds.

An internet search for information about the *Big Brother* series reveals that there was considerable discussion among social scientists in Great Britain about the ethics of a research psychologist's participation in such a venture. In his introductory chapter, Beattie notes that the apartment dwellers participated in full awareness and in accord with procedures required for human subjects of any research. That they were so aware of the public, staged, nature of the exercise in turn lead some researchers to question the usefulness of these taped interactions for scientific study of human behavior. However, in his introduction, Beattie analyzes several interactions excerpted from the series' first season and makes a case for the value of the *Big Brother* corpus for research. This is done chiefly by contrasting it in terms of quantity and naturalness to the sorts of data psychologists ordinarily collect during the brief intervals that subjects spend in their laboratories; also, in terms of the amount of background information the observer comes to have about the apartment dwellers over many episodes.

"A new theory of bodily communication"

These issues of ethics and of the scientific value of the data, however, come to seem almost moot as one progresses through the chapters. The author's exposition depends much less on the *Big Brother* corpus than one is initially led to expect it will. Fewer than two dozen examples of nonverbal behavior from the corpus, most quite brief, are presented, all but one in Chapters 1 and 10. Only some of the *Big Brother* behaviors are examined in relation to the "new theory of bodily communication" with which the book is primarily concerned. The rest are discussed in terms of behaviors such as mimicry, gaze shift, facial micro-expression, self- and other-touching, and smiling. Analyses of such behaviors have informed traditional social psychological accounts of rapport, empathy,

affiliation, and interactional synchrony. However, nonverbal behaviors of these sorts are not what the author is interested in and the theory he wishes to promote is not social psychological but psycholinguistic. Beattie distinguishes popular, 'body language' books that focus on large-scale, "slow" interactional behaviors (p.10) from his effort here on the basis of his emphasis on the subtle temporal dynamics of more fleeting nonverbal behaviors and, especially, on their semantic relationships with accompanying speech. It emerges that "movements of the hands and arms" (p. 39), specifically, iconic and metaphoric gestures, are what the author is concerned with from a theoretical perspective (pp. 36, 65–66). The majority of the analyses described in *Visible Thought* draw on data from experimental elicitations in which participants produce iconic gestures in response to stimuli, or observe gestures of this type on videotape. The "new theory" referred to is David McNeill's theory of the role of gesture in language (1985, 1992, 2000). The author sees the research summarized in *Visible Thought* as supporting and extending this theory. As will be apparent, this is quite true in many instances. Elsewhere, when considering Beattie's findings and conclusions in relation to McNeill's theory, the reader does well to keep in mind the different areas of focus adopted by these two researchers in their studies of the role of gesture in language.

Synopsis of the chapters

Chapter 1 establishes elements of the backdrop against which the rest of the book's content is presented. One of these is the premise that we are all, including the viewers of the *Big Brother* series, "intuitive psychologists" when it comes to observing and interpreting nonverbal behavior. Beattie's goal here is to illuminate meaningful patterns in nonverbal behavior of which the average intuitive psychologist, though, is probably unaware because the behaviors are so fast and dynamic. Another element of the backdrop is a sketch of popular books on 'body language' that emphasize "slow behaviors — posture and sometimes postural mirroring, interpersonal distance, levels of gaze" (p. 10). Intuitive psychologists are ill-served by such books, Beattie argues, as these are, "30 years out of date with respect to the relevant psychological literature" (p. 11). Beattie presents five brief analyses in Chapter 1 of behaviors from the *Big Brother* corpus, apparently write-ups he created for the television show. All deal with behaviors, significantly, including "slow" ones that have been the focus of social psychological studies of human interaction for decades. The psychological constructs he alludes to in these analyses include anxiety, fear, need,

desire, bonding, and power. That Beattie routinely and ably formulated such analyses for the *Big Brother* series suggests that he grants the general validity of this approach. So the problem with the 30-year old research — with, it seems, social psychology — is mainly one of reach. Its methods and constructs cannot inform us concerning the functions, even the existence, of certain categories of fleeting nonverbal behaviors, their complex, micro-timed relationships with verbal behaviors, nor their cognitive significance.

Chapters 2, 3, and 4 comprise a broad-ranging overview of research on nonverbal behavior and language. Chapter 4 includes lengthy citations from Kendon's (1982) history of the study of gestures. The three chapters give a useful summary of many dimensions and uses of nonverbal behavior: facial expressions, social interactive bodily movements, posture, rhetorical gestures, and chimpanzee signing, among others. Chapter 2 sketches the history of the idea that nonverbal behavior is for expression of emotion and attitude while verbal language is for expression of information in propositional form. It covers the thesis that speech is suited to its function because of "design features" such as arbitrariness and displacement (Hockett, 1960). Much of this chapter is devoted to an effective critique of widely cited research by Mehrabian and Ferris (1967), Mehrabian and Wiener (1967), Argyle et al. (1970), and Argyle, Alkema, and Gilmour (1971), to which we owe popular notions such as that "only seven percent of communication is verbal" (p. 27) and that the two modalities are "two separate languages, each with its own function" (p. 35). Chapter 3 focuses in on "movements of the hands and arms" and their highly articulated relationships with accompanying speech. The author illustrates the ubiquity of these gestures with a series of anecdotes. He distinguishes them from socially constituted "emblems" (Ekman & Friesen, 1969) and gestures that signal emotions and interpersonal relationships. He notes that they are much more frequent than the latter but that about them, "all popular language books have nothing substantial to say" (p. 40). The aim of *Visible Thought* is to correct this oversight. Chapter 4 surveys thinking about movements of the hands and arms from the times of the ancient Greeks and Romans, who made systematic studies of rhetorical gesture, through modern day psychological and anthropological approaches to explaining the functions of gestures. Beattie makes clear how the histories of thinking about gesture and theories of human language and mind are deeply intertwined. Thus, his survey naturally includes discussion of sign language and the Deaf, research on the language capabilities of chimpanzees, and theories of the role of gesture in language evolution. He rejects Hewes' (1992) claim that gesture persists in modern humans as a paralinguistic accompaniment to speech (p. 64) and credits the 'cognitive revolution' started

by Chomsky in linguistics for creating the theoretical environment in which coverbal gestures may be understood as integral to the cognitive processes involved in communication.

By Chapter 5, the midpoint of *Visible Thought*, Beattie has identified and set aside the varieties of nonverbal behavior and the theoretical approaches to them that are extraneous to the story he wants to tell. Here he sharply narrows the focus to just three dimensions of gesture semiosis: iconicity, abstract metaphor, and focus or emphasis (beat gestures). There is no discussion of the potential for co-occurrence of these semiotic dimensions. For Beattie, the semiotic and functional dimensions of gestures are equated with isolable gesture types. He defines and gives examples of iconic and metaphoric gestures, drawing on his own and McNeill's (1985, 1992) published work.[1] The data that are described qualitatively in Chapter 5 come for the most part from narrative discourse elicited using animated cartoons. Elements of the analytic method are also introduced here. The author discusses the different phases of gestural movements and how their durations and synchrony with intervals of accompanying speech are precisely measured in milliseconds. He shows how such analyses lead to theoretical claims of a very close integration of the speech and gesture channels in language production. Chapter 5 also brings fully to the fore Beattie's emphasis on the potential that gestures have to convey information that may be absent from the accompanying speech. This is what makes gestures "worthy of serious consideration" (p. 68). As will be discussed in detail below, in this he diverges from McNeill's theory in emphasis. Also, his treatment of the issue of content in representational gesture that is not in speech makes this seem a larger phenomenon than it may be in natural extended discourse. Two reasons for this are: (i) the gesture-speech utterances Beattie presents are in many cases considered in isolation from their larger discourse contexts, and (ii) scant attention is paid to the 'joint highlighting' function of many gesture-speech combinations. Data related to these and their import for how we think about the communicative impact of gestures will be discussed following the synopsis of chapters.

The first half of Chapter 6 elaborates further on aspects of McNeill's theoretical framework. These may be summarized as the following claims, all of which apply to the gestural phenomena Beattie particularly focuses on. Speech and gesture are manifestations of two different modes of meaning creation; one linear and segmented, the other holistically multidimensional. Unlike sign language lexical units, gestures lack standards of form. They are the idiosyncratic creation of an individual speaker at the moment of speaking.[2] Gesture forms bear non-arbitrary meaning relationships to their referents. The remainder

of the chapter considers cross-cultural comparative studies of gesture. Beattie quotes McNeill (1992), stating, "the gestures of people speaking different languages are no more different than the gestures of different people speaking the same language." In presenting the work of anthropologist David Efron (1941/1972), Beattie discusses how members of different cultures, though, gesture very differently; further, that cultural assimilation for non-natives involves adopting a new style of gesturing. One infers that for Beattie, the great majority of cross-cultural variation lies in the domain of emblem gestures. Results of a cross-language study of speech and gesture that compared English and Arabic speakers' cartoon narrations (Aboudan & Beattie, 1996) are presented in support of the claim that, "differences in gesture use in different languages and in different cultures are relatively trivial compared to the underlying similarities" (p. 84).

In Chapters 7, 8, and 9 Beattie presents results of experimental studies that he and his students have conducted in recent years to investigate the role of coverbal gesture in speech production and comprehension. The goal of studies described in Chapter 7 was to test the 'lexical retrieval hypothesis' (Butterworth & Hadar, 1989; see also, Krauss, Chen, & Gottesmann, 2000). This is a chief contender among hypotheses concerning the function of iconic gestures. The hypothesis is that such gestures activate imagistic representations and that these assist the speech production process in locating items in the mental lexicon. Beattie and Coughlan (1998) asked participants to narrate the same story content six times in succession. Results revealed no significant decrease in the frequency of iconic gestures as an effect of rehearsal. In other words, gesturing continues at a high rate, even when the same lexical items are accessed repeatedly. Another study elicited tip-of-the-tongue ('TOT') states in speakers (Beattie & Coughlan, 1999) and found no differences in rates of TOT resolution between a group of speakers who kept their arms folded across their chests and a group who were free to gesture. In the gesturing group, further, iconic gestures were not significantly associated with TOT resolutions. Beattie and Shovelton (2000) discuss how such evidence disconfirms the lexical retrieval hypothesis and leaves standing the hypothesis that "[gestures] operate in conjunction with speech itself to communicate the speaker's thinking" (p. 95). The latter hypothesis then motivates the presentation in Chapter 8 of experiments demonstrating that viewers derive the most accurate information from short excerpts of natural discourse if they are exposed to gestures and speech rather than to just speech (Beattie & Shovelton, 1999a, b). Chapter 9 discusses experiments in which participants viewed short clips excerpted from natural discourse on video and were able to report more accurately on details of the events and entities

described when the speakers in the clips used character viewpoint rather than observer viewpoint gestures (Beattie & Shovelton, 2001a, b, 2002).

In Chapter 10 Beattie returns to discussion of gesture in spontaneous natural discourse and includes some further examples from the *Big Brother* corpus. The focus remains on gesture as the carrier of meanings not expressed in speech. A highlighted theme is the potential for gesture to reveal aspects of the speaker's thinking that he or she may wish to conceal. The author briefly introduces social psychological research on nonverbal behavior in deceptive discourse, pointing out that, "researchers who work on lying tend not to carry out the very detailed kinds of analyses of language and gesture that we are considering here" (p. 168). He then describes a recent study of his own, not yet published, in which participants told the story of a cartoon they had seen but were instructed to change some of the details; to 'lie.' Beattie reports that, though participants were able to insert the false information into their spoken narrations, on occasion something of the actual witnessed content "leaked through in their gesture" (p. 170).

The dominant theme that emerges across the chapters of *Visible Thought* concerns representational hand gestures with which "people quite unconsciously and rather unwittingly display their inner thoughts and their ways of understanding events in the world." McNeill's theory is interpreted in relation to this as being an account of how people communicate messages to one another through two channels simultaneously, dividing the contents of their messages between them. Chapter 11 elaborates on this theme in two ways. First, Beattie discusses Goldin-Meadow and McNeill's (1999) reflections, from an evolutionary perspective, on the role of gesture in language. Those authors consider the question of why the ability to use speech evolved at all, since sign language is as capable as spoken language is of "delivering messages in segmented and combinatorial form" (p. 176). They speculate that evolution of speech liberated the hands for their image-making function. This, according to McNeill's theory, is intrinsic to language production. Speech, due to limitations inherent in the channel, cannot encompass this function. Beattie relates this speculation to his theoretical focus on message transfer: "the speech modality is nowhere near as good at creating images to help the communication along" (p. 178). Second, Beattie describes further recent research conducted with Shovelton, undertaken on behalf of marketing research entities in the television industry. Television commercials for fictitious products were developed as stimuli. Each featured an actor performing a script that specified particular iconic gestures to be produced in synchrony with specific spoken phrases. A portion of the gestures contained information that was not in speech. Study participants were

exposed to text, speech, and speech-plus-gesture versions of the commercials and afterward were quizzed on their knowledge of details of content. "Significantly more questions were answered correctly in the video condition than in either the audio or text condition" (p. 188). This is good news for Beattie's television industry clients facing competition from radio and newspapers for advertising dollars. The researchers also found that the information content of larger gestures was more likely to be recalled than that of smaller gestures. The author notes, "the research had now finally come out of the world of cartoons and the *Big Brother* household and had ended up very much in the hard commercial world of advertising." One can consider this statement in relation to the differences in discourse variety and degree of speaker–listener interactivity that characterize the author's work on natural extended human interaction (the *Big Brother* and narrations corpora) *versus* that on experimental elicitations involving performed stimuli viewed by study participants on tape or as text. In the latter type of 'discourse' the potential customer or the participant in an experiment trains his or her attention for 30 seconds on a multimodal communicative artifact, highly-constructed to deliver specific information. Beattie and Shovelton's findings concerning viewer uptake of gestured information in such contexts undoubtably have great relevance for our understanding of the 'discourse' that advertisements engage in with potential customers. The relevance of such findings for a theory of natural language use, like that of McNeill, however, remains to be fully determined.

Differences between Beattie and McNeill in theoretical emphasis

Visible Thought is dedicated to David McNeill. Many arguments Beattie presents throughout the book claim as their point of departure the theoretical framework McNeill has developed since the early 1980s. It is useful, therefore, to relate the substance of this book to the framework it promotes. The remainder of this review is an attempt to do that.

McNeill's framework is multifaceted and has implications for many dimensions of gesture in language use. Beattie's treatment of it, however, makes clear that there are different ways to interpret statements such as the following that Beattie quotes directly from McNeill: "to get the full cognitive representation that the speaker had in mind, both the sentence and the gesture must be taken into account" (p. 95). The different interpretations hinge on what type of observer of gesture we assume such a statement concerns — the average listener or the researcher with tools enabling micro-analysis, across multiple passes,

of persistent audio-video data. When conversational gestures are large-scale, measured in pace, and vivid, the average listener and the analyst may perceive them in roughly comparable depth and detail. When, however, gestures are small, fleeting, or vague (as the majority tend to be, in some communicative contexts), the likelihood may be that the average listener will fail to absorb the speaker's "full cognitive representation." Beattie and Shovelton's findings, reported in Chapter 10, concerning differential perception of large *versus* small gestures suggest this likelihood. The author nevertheless generally seems to overlook this in formulating his claims about gesture's communicativity. The emphasis on content in gesture that is not in speech makes Beattie's thinking seem especially in tune with linguistic anthropological research that demonstrates the ways gesture functions as a communicative resource (Kendon, 2004; Goodwin, 2000; Streeck, 1993; among others) and with social psychological research, especially on deception, that examines nonverbal behaviors for hints of content speakers may be trying to exclude from their speech (Ekman & Friesen, 1967; DePaulo et al., 2003). The book publicist's opening line on the back cover of *Visible Thought* picks up on this dominant theme. It asks, "are you saying one thing whilst your hands reveal another?"

   McNeill's framework accomodates the possibility that genuinely engaged interlocutors likely often do comprehend and make use of meanings manifested in coverbal representational gestures. Nevertheless, his published findings have largely concerned the insights psychologists and linguists gain from technology-enabled microanalyses of gesture-speech "temporal and semantic synchrony" (McNeill, 1992, p. 27). These analyses expose the roles of visuospatial and motor-imagery in the moment-by-moment process of language production. Such explorations of 'thinking for speaking' have been the foundation of McNeill's research method and of his claims concerning the meanings and functions of gestures. Beattie's notion of visible thought, in contrast, emphasizes gesture as a source of information available to the listener-participant in a natural interaction, beyond what is available in speech.[3] He is correct to point out that further research is needed to discover what participants in everyday conversation do comprehend from one another's coverbal gestures. He also correctly identifies design elements of the often cited McNeill, Cassell, and McCullough (1994) study of gesture comprehension that limit the explanatory reach of that study (p. 105). While some of own his studies of gesture communicativity share similar design limitations (for example, use of staged gestures as stimuli, as in the advertising study described in Chapter 11), the author's contributions to this line of research are important. However, if we conceive of McNeill's theoretical framework (particularly in its 1992 instantiation, on

which Beattie draws most heavily), as speaker-oriented and primarily meant as an account of aspects of the language *production* process, the statement that evidence of listener *comprehension* of gesture addresses a "major shortcoming" of the theory (p. 105) is too strong.

Beattie, like McNeill, has the cognitive psychologist's concern with psycholinguistic processes. His own studies have yielded key counter-evidence to the 'lexical retrieval hypothesis.' They thus have clear relevance for McNeill's theory of language production, in that they undermine claims that gestures exist solely to provide an assist to speech production, rather than being a mode of representation that is integral to every unit of language production (fluent or dysfluent). Further, though focused on coverbal, iconic gestures' communicativity, Beattie regards gestures as unwitting manifestations of thinking. Thus, whatever else Beattie's approach may share with linguistic anthropological treatments of nonverbal behavior, he makes no claims for 'recipient design' (the notion that gestures are optimally configured for listener comprehension); just the opposite, it appears. That is, if gestures were formed so as to make their meanings readily apparent to average listeners, one would think it unnecessary for Beattie to instruct his readers on how to perceive the information available in gestures (p. 180). Nevertheless, his interpretation of Goldin-Meadow and McNeill's (1999) view of language evolution is that gestures exist to communicate images to listeners. Given the time frame of these speculations — human species evolution — one infers that human cognitive and communicative capacities of a very fundamental sort are the focus. Thus it seems all the more odd to think that tutoring in modern-era psycholinguistic research findings would be necessary to get listeners to treat gesture as an information source. Overall, though gesture communicativity is clearly central to Beattie's thinking about language, his exact views about how gestures accomplish this function in everyday natural discourse remain somewhat unclear.

The cross-language comparative research Beattie reports in Chapter 6 reveals yet another point where Beattie's and McNeill's perspectives diverge. A methodological aspect of this is evident in Beattie's assertion that, "previous research has not focused on the detailed micro-analysis of individual unconscious gestures like those being studied here" (p. 87). In fact, precisely this analytic technique has been the foundation of McNeill's work since the early 1980s. Applied to the narrative discourses of speakers of a variety of languages, it has crucially informed the development of his theory. A core theoretical goal is to account for how speakers of different languages, in describing the same event, may conceptualize aspects of it in distinctive ways, corresponding to the grammatical-linguistic differences among their languages (McNeill, 1992, see

especially Chapter 8; McNeill & Duncan, 2000). Beattie's foray into cross-language comparative research thus seems to stop where McNeill's begins, with claims that assert a role in gesture formation of some mode of visuo-spatial and motoric cognition that all human beings certainly share. Thus we see that while both researchers exploit gesture as a "window onto thinking," they differ in the *kinds* of thinking they choose to explore. Beattie, throughout the book, reveals a primary interest in observing gesture for information content not expressed in speech, and for insight into speaker beliefs and intentions, whereas McNeill's interests are much more those of the linguist or language theorist. How an individual speaker's mind negotiates with the formal structures of his or her particular language in order to produce utterances expressive of a given sequence of motion events, for instance, is a very different research focus than that of how speakers may unwittingly reveal more about their beliefs, past actions, and current intentions than they intend.

Multimodal idea units

Earlier it was suggested that Beattie may overestimate the extent to which gesture manifests semantic content found nowhere in the accompanying speech. Two issues of research method that seem relevant to this were mentioned. The first is an analytic approach that Beattie shares with many gesture researchers. This is the approach of examining individual gesture-speech combinations in isolation from their discourse contexts. An example of this is an utterance taken from McNeill (1992, p. 13) that Beattie discusses at some length (p. 67): [4]

(1) and she [chases him out again]
     Iconic: hand appears to swing an object through the air.

In explicating this utterance Beattie notes that, "the iconic gesture conveys that some form of weapon is being used […] the gesture shows that it is a long object, that can be gripped by a hand." The weapon in question is an umbrella, however that word is absent from the sentence accompanying the iconic gesture. Note in (1), however, that the word "again" signals that the act of chasing is being described for at least the second time in this narration. The listener actually has already learned, in the spoken discourse prior to this point, that this cartoon character regularly brandishes an umbrella and beats her victim with it.[5] It may even be the case that too many repetitions of such a speech element would seem stylistically awkward. When the discourse context as a

whole, rather than just this one gesture-speech combination, is considered, the feeling that there is a content gap here for the gesture to fill diminishes.

The second issue is that Beattie's focus on gesture-speech combinations like (1) seems to have resulted in another sort of combination being generally overlooked: utterances in which the two modalities 'jointly highlight' the same content. The result of such selective focus is that the relative frequency of the latter and their significance for cognitive and communicative processes are not assessed. Examples (2) and (3) are cartoon narration excerpts in which the two modalities both highlight the same component(s) of a motion event:

(2)   [he climbs up] the pipe
      Both hands, loose shapes, move alternatingly upward, flapping on wrist pivots, from abdomen-level to shoulder-level.
      Inferred meaning of gesture: figure, climbing manner, upward path of motion.

(3)   he falls [down] the pipe
      Right hand on right thigh, index finger drops from raised position back to thigh.
      Inferred meaning of gesture: downward path of motion.

In examples like these it is a challenge to identify any semantic component in gesture that is not also expressed in the synchronized speech. Such utterances call to mind McNeill's (1992, p. 27) notion of "semantic synchrony," meaning, "that the two channels, speech and gesture, present the same meanings at the same time." For McNeill, this does not mean, in cases like (2) and (3), that the two channels are redundant. His core theoretical principle that categorical linguistic forms and gestures have qualitatively different semiotic properties precludes redundancy. However, any analyst who does the exercise of examining gesture-speech synchrony phenomena exhaustively across all utterances in an extended discourse will encounter many combinations that might be termed 'narrowly' semantically synchronous in contrast to others that are more 'broadly' so, the latter being instances of gesture-speech complementarity. In *Visible Thought* there is little text devoted to gesture-speech combinations like (2) and (3), ubiquitous in natural discourse, in which the two modalities jointly highlight content. Instances in which each modality underscores the other — or to put it another way: adds representational dimensionality to the expression of a single component of meaning — the author sets aside as instances in which gesture is "merely used for emphasis" (p. 68; see also, p. 187). The high frequency of occurrence of such combinations, however, argues for investigation

of their cognitive and communicative implications for speaker and listener. One issue, for instance, that one does not see addressed in writings on gesture (Beattie's as well as those of other researchers) that deal with the capacity of the gesture channel to carry semantic content beyond what is in speech: how often, in spontaneous natural discourse, is the additional content carried by gesture the *focal information* that the particular utterance is generated to convey? It may only infrequently be the case. Here is another point where Beattie's perspective seems to diverge from McNeill's theoretical framework. Prominent in the latter is the issue of discourse focus, moment-by-moment, across an extended interval of talk. In theory, each utterance is structured to emphasize the element of new information that is moving the discourse forward, the element that contrasts with the discourse background of that moment. We can imagine that an utterance that manifests the discourse focal meaning only in gesture may be communicatively less effective than one in which the two channels cooperate to emphasize that focal meaning. From McNeill's theory then, we gain an account of a frequently occurring type of gesture-speech relationship (joint highlighting of unitary meaning) as well as another way to think about gesture's contribution to the communication of information. A still further implication of such utterances that Beattie seems not to have considered is too large to address here. Briefly, this concerns the likely impact on the listener of the multimodal expression of an idea unit. An element of meaning that is presented simultaneously in the linear, segmented semiotic form and in visuospatial/motoric semiotic form, we can hypothesize, will elicit a greater range of encoding responses and thus have greater cognitive impact.

Conclusion

Beattie does an admirable job of putting into readable form the arguments that "the remarkable biological miracle" (p. 45) of human language has an intrinsic gestural component. Though the narrative starting point for *Visual Thought* is a pop cultural phenomenon and the book is very accessible and engagingly written, it is more than popular science writing. The author achieves coverage of the very complex history of approaches to the study of nonverbal behavior, of accumulated empirical findings, and of theories of nonverbal behavior and language (including even a thumbnail sketch of Chomskyan theory of syntax). *Visible Thought* also provides a useful overview of Beattie's own research findings, making clear their relationship to current thinking about the functions of gesturing for speakers and listeners. Thus, in addition to being a useful

introduction and overview of the ideas motivating a lot of research in field, the book will spur the researchers among its readership to consider necessary next empirical steps.

The bodily actions that people produce when speaking, even when we limit consideration to hand gestures, are exceedingly heterogenous. All who study and try to explain gestural behaviors tend to focus in on or emphasize a subset of all the patterning that may be found there. Though his stated purpose is to present David McNeill's theory of gesture in language, overall it seems that the evidence and arguments Beattie puts forward tend flow from a rather different perspective. The difference is one of emphasis, to be sure; nevertheless it exerts a shaping pressure on his treatment of empirical findings throughout the book. The reader comes to appreciate that Beattie's perspective motivates a method-ological approach and theoretical framework very much his own. He can take full credit for the accomplishments of his approach in the realm of commercial applications and for raising the level of public scientific discourse about this domain of human behavior. His clients in the real-world field of marketing and a multitude of intuitive psychologists are well served. His presentation of his distinct perspective in relation to other well-known theoretical frameworks, making the differences and similarities clear, also serves the gesture research community well.

Notes

1. The definition given for iconic gestures is rather unusual: "These are gestures whose par-ticular form bears a close relationship to the accompanying speech" (p. 65). His treatment of actual instances, however, is similar to that of other authors, focusing on how the forms of iconic gestures bear a depictive relationship to the entities and actions to which they refer.

2. C.f. Kendon (2004), Chapters 10–13 and 15 for presentation of a very different set of assumptions. Since Beattie's and Kendon's studies share an emphasis on gesture's communi-cativity, it is therefore of some theoretical interest to reflect on their diverging conceptions of how gesture is structured to achieve this.

3. At times this almost seems like a reformulation of the "two separate languages" notion (p. 33) that Beattie rejects.

4. Square-bracketing, in keeping with the convention Beattie employs for most of the book, indicates gesture stroke phases.

5. The cartoon used for these elicitations features characters whose proclivities are generally well-known to the study participants. Listeners on occasion speak of the umbrella as part of the character's accoutrements even before the narrator refers to it in either speech or gesture.

Shared knowledge or 'common ground' is thus another source of content available to the listener that reduces any burden on gesture to fill in gaps left by speech.

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