

PART III
OUTER INTENTIONAL SIGNS
CHAPTER EIGHT
LINGUISTIC SIGNS EMERGE FROM NATURAL SIGNS

Chapter Four described some similarities between locally recurring natural signs and public language signs. Chapter Six described similarities between natural signs and intentional signs. Given this background there are observations that fairly cry out to be made about similarities in the interpretation of natural signs and public language signs. Part Three is about these similarities.

Explicitly represented human purposes emerge from more primitive levels of purpose and then submerge again, for their final phases are implemented at these more primitive levels (Chapter One). Similarly, conventional language signs emerge from natural signs and never break entirely free of them. The most primitive intentional signs used between organisms are signals such as the rabbits' danger thump, the call that the hen makes to her chicks when she has found food, the posture of the angry cat, its lashing tail, the dog's playbow and its wagging tail, the mating dance of the stickleback fish and of the Canada goose, and so forth. Many communicative body postures and facial expressions in humans are of a similar nature, being endogenous in origin (Elkman 1980). According to ethologists, communicative animal signals appear to have evolved from preparatory movements or "intention movements," made at the onset of some activity. Originally these movements served accidentally as cues to conspecifics. They were just natural signs, either of the animal's ensuing activity or of the activity's normal stimulus, signs, for example, of danger, food, readiness to mate, or of hostile or friendly feelings. If it was advantageous for the animal that its conspecifics, or at least its kin, should be aware of what it was readying to do, or aware of the stimulus that induced this readiness, these intention movements slowly became more genetically enabled, stereotyped, and exaggerated. Similarly, conspecifics interpreting the sign slowly became tuned not just by learning but by genetic selection to react to the sign appropriately. That conspecifics should be aware of what an animal is ready to do or of the stimulus that provoked this readiness is often useful to both animals. For example, if the bird makes an obvious signal as it prepares to flee from a predator and this causes the whole flock to scatter, it helps the original bird not to be individually noticed by the predator. Certainly it helps the bird for its partner to know when it is ready to mate, and so forth.

The evolution of intentional signs from natural signs also occurs quite rapidly through a similar ratcheting process involving learning. According to Tomasello, "the available evidence suggests that ontogenetic ritualization, not imitative learning, is responsible for chimpanzees' acquisition of communicative gestures" where "in ontogenetic ritualization a communicatory signal is created by two organisms shaping each others' behavior in repeated instances of social interaction. For example, an infant may initiate nursing by going directly to the mother's nipple, perhaps grabbing and moving her arm in the process. In some future encounter the mother might anticipate the infant's impending behavioral effects at the first touch of her arm, and so become receptive at that point --leading the infant on some future occasion still to abbreviate its behavior to a touch on the arm while waiting for a response..." (Tomasello 2000 p. 176). Similarly, the human mother who sees her baby reaching for something may hand it to him, from which he soon learns simply to hold out his hand toward something he wants. Consider, as more

sophisticated examples, how members of a sports team, or of a string quartet, or dance partners, may fine tune their coordination through practice, without an explicit understanding or awareness of the subtle signs they are using to accomplish this. It is possible that the emergence of a certain amount of intentional human signing (not necessarily involving explicit intentions) may have originally evolved in this way in connection with mutually beneficial social activities such as cooperative hunting, warfare, the creation of environmental structures like shelters and fortifications that benefit all, and so forth. Intentional signs originating in this way might then be passed on among humans by imitation.

If this is right, however, one would expect there to be a vagueness in some cases between production of a sign merely as a preparatory movement or natural sign and production of it as an intentional sign, and also a vagueness in some cases between instinctive recognition of the sign's significance and recognition as a result of past experience and learning. For example, there would be a vague line sometimes between animal signals that were still merely natural signs and those that were intentional. And there would be a vague line between natural signs that help tune members of sports teams and string quartets to one another's doings and intentional signs that serve this function. This is one way, then, in which intentional signs emerge, but only gradually, from natural signs.

Having become intentional signs, animal signals do not lose their character of being also natural signs. They continue to be locally recurring natural signs in the sense defined in Chapter Three. Even if the signaling animals or humans were to come to produce the signals through a large number of different mechanisms, for example, on the basis of various different inductive and abductive inferences, still these signs could be read exactly as are recurrent natural signs. It makes no difference to the interpreter how various or how complicated the mechanisms of sign production are so long as the signs correlate well enough with corresponding world affairs within some trackable domain. (False intentional signs remain, of course, as entirely unlike natural signs. There are no false natural signs. And intentional signs that are true only by accident are also unlike natural signs, for if reading them produces true belief or productive action, that is sheerly accidental.)

In Chapter Two I discussed two different ways that words and sentences can acquire proper functions or purposes, emphasizing that these different origins of purpose sometimes cause linguistic tokens to conflict in purpose. First, there are the purposes of public word types and syntactic form types as replicating memes having their own linguistic functions. These functions are, as it were, the current survival values of these linguistic types, given current cooperative speaker uses and hearer responses to them that encourage their proliferation. Speakers in the language community are adapted to an environment in which hearers are responding, sufficiently often, to the forms speakers produce in ways that reinforce these speaker productions. And the hearers in the community are adapted to conditions under which speakers, sufficiently often, produce these language forms in circumstances such that making conventional responses to them aids hearers. These are the conventional functions of the language forms. These functions sustain the conventions of responding to these types in certain ways and, reciprocally, of producing them for certain purposes.¹ Since within each language community speakers have been designed by learning to use certain linguistic forms to produce certain responses in hearers, while hearers have been designed, reciprocally, to respond in expected ways

to speakers using these forms, these forms are produced and used or interpreted by mechanisms designed to cooperate with one another --the requirement for being cooperative intentional signs (Chapter Six).

In so far as these public signs need to map onto affairs in the world in order to complete their memetic functions normally, they also fulfill the mapping requirement for being intentional signs. As will be remembered, descriptive intentional signs can serve their full functions by normal mechanisms only if they already map correctly, while the functions of directive intentional signs are to produce world affairs onto which they then will map correctly. Pushmi-pullyus work both of these ways at once ("In this classroom, Johnny, we raise our hands when we want to speak"). The various grammatical moods of sentences each has a variety of conventional functions. These forms are, as it were, polysemantic in function (Millikan 1984 Chapter Three, 1998, 2001a). For example, the indicative mood in English sometimes conventionally serves a directive function ("You will report to the CO tomorrow at 6 am sharp!") and sometimes conventionally serves a pushmi-pullyu function ("The meeting is now adjourned").² Like intentional animal signals, when descriptive forms are true and true not by accident, and when directive forms are complied with and not by accident, public linguistic forms are locally recurrent natural signs as well as intentional signs. And like locally recurrent natural signs, one must track their natural domains in order to read them. For example, the indicative mood serving a descriptive function occupies one domain, the indicative mood as conventionally serving a directive function occupies another. Each use of the mood proliferates relatively independently.

The second way that words and sentences acquire proper functions or purposes is derived directly from speakers' purposes in using them. The purpose of a speaker in producing a linguistic token lends it a derived proper function or purpose (Chapter Two). Functions derived from a speaker's purpose in using a public linguistic form may or may not accord with the form's own purpose, depending on whether the speaker is using the form in a conventional or a nonconventional way. Consider then tokens that are used in nonconventional ways, for example, fresh figures of speech or fresh Gricean implicatures. The mere fact that a speaker uses a linguistic token with the purpose of producing a certain response in a hearer is not enough to make that token into a cooperative intentional sign token having that purpose. A cooperative intentional sign has to be produced by a device to cooperate with its interpreting devices, the interpreting devices being, reciprocally, designed to cooperate with devices designed like it. Does it follow that language forms used in nonconventional ways are not cooperative intentional signs?

Both the impulse to communicate and the capacity to understand that others are attempting to communicate seem to be built into human children but seem not to be attainable, or attainable only in very small measure, by members of other species.³ Only human children spontaneously follow the gaze of others, understand pointing and other gestures intended to call their attention to what another attends to. Children deprived of the use of a public language by deafness spontaneously invent ways of communicating (Kegl and Copola 1999). They spontaneously suit their gestures to the natural capacities for interpretation of the people around them. The deaf child attempting to make her wants known through exaggerated intention movements, through miming, and through attention-drawing gestures creates cooperative

intentional signs (in our technical sense), for the systems in the child responsible for the impulse to communicate in this fashion have certainly co-evolved with the systems in her human interpreters capable of coming to understand these communications. These two systems have been designed to cooperate with one another. Neither is found in other species, or not to any significant degree. When the child is successful, the signs she uses have as purposes to produce definite responses on the part of the interpreter, and the interpreter also understands and cooperates entirely purposefully. However, signs of this sort are not recurrent natural signs.

The elements of successful communications are repeated by the deaf child, becoming stereotyped or conventionalized over time and are more and more easily understood by the child's caretakers and peers. Thus the child's signs slowly move from having purposes derived only from intention in use with a cooperative hearer to acquiring conventional memetic functions. They slowly become elements of a local public language. They slowly become recurrent intentional signs, which implies that they are also, in normal cases, recurrent natural signs. In a similar manner, nonconventional uses of public linguistic signs in normal conversation that are spontaneously understood by the hearer are intentional signs carrying content intended by the speaker. These uses also readily become conventionalized, producing recurrent intentional signs. And just as a vague line can exist between animal signals that are still serving mainly as natural signs and those that are fully intentional, there is often a vague line between unconventional uses of language that are slowly becoming conventional and fully conventional uses, producing recurrent conventional signs.⁴

There is an interesting similarity between many nonconventional uses of conventional linguistic forms and the communicative miming of deaf children. The deaf child who uses mime to communicate does not actually engage in the activities mimed but does count on the interpreter's understanding of what activities these are. Miming is like picturing; the ability to see the mimed event in the miming resembles the ability to see a pictured object in its picture. Similarly, the speaker who turns language to other than conventional purposes involving figures of speech or Gricean implicatures does not use these bits of language for their conventional purposes (or not for their conventional purposes alone) but does depend on the interpreter's understanding of what these conventional purposes are. It may be that sarcastic, hyperbolic and joking uses of public linguistic forms are best understood as pretending or miming the conventional uses of these forms. This suggests that there may also be a close relation, at least in some cases, between reading nonconventional uses of conventional signs and reading natural signs too. But I will not pursue this matter here. Signs used nonconventionally certainly appear not to be recurrent natural signs in any straightforward way, hence would seem not to be readable in the same way that recurrent natural signs are read.

Returning to conventional uses of linguistic signs, notice that the transition from recurrent natural signs to recurrent intentional signs does not affect the kinds of semantic mapping functions that apply. So it does not affect the kinds of abilities needed to interpret these signs. The slow transition from an anticipatory movement produced as a byproduct and read merely as a natural sign to its purposeful stereotyped intentional form has no effect either on its semantic mapping function or on the ease or difficulty of tracking its domain. Recurrent intentional signs produced for an interpreter designed to read them might also be read as recurrent natural signs by an independent interpreter not designed symbiotically to interpret them. Thus I might read the

rabbit thump as a sign that something is threatening the rabbits, or read the bee dance as an indication of where to find nectar. Nor does it matter to the purposes of the chick whether its mother's food call is merely a recurrent natural sign, or also an intentional sign. Just as you or I can learn what a black cloud means or what the geese flying south means, so might a Martian learn to read conventional human language signs, even mistaking them, perhaps, for being genetically determined (like bee dances) or locally recurrent natural signs (like intention movements).

Of course conventional human language signs could be read this way only when true or satisfied. Similarly, black clouds mean rain only when it actually rains. To interpret a locally recurrent natural sign you have to stay within the boundaries of its domain. To interpret a recurrent intentional sign, you also have to track its domain, which is extended through the medium of competent, reliable, and sincere speakers of the language who have learned from one another. That is not always an easy thing to do.

I propose now to argue that, in fact, conventional signs used for their conventional purposes usually are read in exactly the same way that natural signs are read. This may be a somewhat unintuitive claim. In the remainder of Part Three I will spell this claim out in detail, discussing a number of its consequences, along with consequences of the thesis that the distinction between natural and conventional signs is not sharp but graded.

Chapter Nine argues that understanding language is at root just one more form of sensory perception. One hears what goes on in the distal world through the medium of other people's perception and speech transmission systems just as one sees what goes on in the distal world through a transmitting medium such as television, or through the medium of normally surrounding light. This perception is "direct" in a strong sense that I will explain.

Chapter Ten argues that just as no intentional representations of retinal images intervene between physical objects and the seeing of those objects, no representations of speaker intentions in speaking need intervene between world affairs spoken of by speakers and hearers' understandings of those world affairs. Just as one can interpret information filtered through a pair of binoculars currently trained and focused on a certain domain without having any understanding of what is inside the binoculars and why they work, one can interpret information filtered through another person's perceptual and cognitive systems currently trained and focused in a certain direction or on a certain domain without knowing anything about mind mechanics. Conventional language signs possess their own reference class domains, just as natural signs do. These domains have to be tracked exactly as do the domains of natural signs (unless one happens accidentally to live one's life largely or exclusively within the domain). Tracking these domains often involves following in the wake of the eye gazes or mental gazes of speakers, but need not involve thinking about speakers' intentions.

Chapter Eleven is about the semantics/pragmatics distinction. I will interpret this as the distinction between what is conventional in language use and what is, instead, a matter of communicative cooperation between an individual speaker and an individual hearer. I will argue that there is a very wide and vague boundary between these extremes. The distinction rests on statistics over individual psychological processing techniques, which may vary widely, not merely among speakers of the same language, but for the same individual speaker on different occasions.

The distinction between semantics and pragmatics has sometimes been interpreted as separating the contribution to meaning of language proper from the contribution to meaning of language context. In Chapter Twelve I will argue that this is a confusion. It arises through a failure to understand the exact way in which communication conventions concern not only phonology, syntax and lexical conventions but also context. A proper understanding of how context functions within the conventions of language leads to a new interpretation of the semantics of indexicals, demonstratives and referential descriptions.

FOOTNOTES

1. By saying these usages are "conventional," I mean only that they are replicated or in some way reproduced and that their forms are largely arbitrary with respect to their functions. Other forms could have done the same jobs had they been preceded instead. For a careful explication and defense of this analysis of what makes public language forms "conventional," see (Millikan 1998).

2. See Millikan 1996a. On this analysis, question forms, whether indicated by syntax or by tonal inflection or both, are directive (as is traditionally supposed).

It is not the function of every directive public language form to produce an intention nor the function of every descriptive form to produce a belief. There are ways of functioning other than through the production of desires, that result in effects systematically isomorphic to the language forms that produce them, and there are ways of functioning other than through the production of beliefs, that require language forms to correspond systematically to certain kinds of world affairs. An example of the latter is the

form "'X' means Y", discussed above in Chapter Seven, which has truth conditions but whose function is not to produce a belief. Another is the form "...exists" (Millikan 1984, Chapter 12). Also, there are functions that ride piggyback on more basic functions, as is the case with hypotheticals and various of the modals. But I must leave all of that aside here. (Gunnar Björnsson at the University of Stockholm has been investigating the functions of various of the modals from this point of view.)

3. For discussion, see Donald (1991) pp. 132-134.

4. This point is expanded in Chapter Eleven, and more so in (Millikan 2001a)