1 *The acquisition of deictic terms*

Deixis

When language is spoken, it occurs in a specific location, at a specific time, is produced by a specific person and is (usually) addressed to some specific other person or persons. Only written language can ever be free of this kind of anchoring in the extra-linguistic situation. A sentence on a slip of paper can move through space and time, 'speaker'-less, and addressee-less. All natural, spoken languages have devices that link the utterance with its spatio-temporal and personal context. This linkage is called 'deixis.' Personal pronouns are paradigmatic deictic terms. Verb tense is a deictic device. Other deictic terms and terms incorporating deictic elements will be discussed later.

In his classification of signs into symbols, indices, and icons, Peirce placed deictic terms in a category intermediate between symbols and indices (Burks, 1949). Peirce's classification is based on the idea that there are different ways in which one thing can 'signify' another. Let us take the example of a house. One way to signify 'house' is by using the word *house*. The word is associated with the object by conventional rule. This classifies it as a *symbol*. As Burks points out, all words are symbols because they are associated with their objects by conventional rules. A blueprint of a house also serves as a sign of a house. It does so by exhibiting the same structure. This classifies it as an *icon*. Finally, one can also 'signify' a house by the act of pointing at it. Pointing calls attention to the house directly or, in Peirce's terminology, by standing in an 'existential relation' to it. Pointing is the prototype of an *index*. According to Burks, a symbol can be said to denote a house, an icon to exhibit or exemplify it, and an index to indicate it.

Deictic terms partake of two sign functions. For example, the pronoun *I* is a symbol insofar as it is a conventionalized term, arbitrarily different from *you*, and from its equivalent in other languages. It is an index in

that it refers to the person uttering it. It 'cannot represent its object without being in existential relation [to it]' (Jakobson, 1957). Because of this combination of functions, Peirce classifies deictic terms as 'indexical symbols.'

Jakobson focuses on the *combination* of functions in making the claim that deictic terms, or 'shifters' as he calls them, are 'a complex category . . . [that belong] to the late acquisitions of child language and to the early losses of aphasia . . . It is quite obvious,' Jakobson goes on, 'that the child who has learned to identify himself with his proper name will not easily become accustomed to such alienable terms as the personal pronouns.'

Lyons (1975), on the other hand, focuses exclusively on the indexical function of deictic particles in his argument that they are primitive and ontogenetically prior to other referring expressions. The claims of Jakobson and of Lyons are not incompatible. Lyons does not predict that correct use of *I*/*you*/*he* will be achieved early, or that *this* and *that* will be understood early in their contrastive sense. This level of knowledge depends precisely on the combining of the indexical function of these terms with their symbolic function. *I* is indexical, but specifically it is an index of the speaker. *You* is indexical, but specifically it is an index of the hearer. *This* and *that* are indexical, but they are specifically indexical of entities and, in their contrastive sense, of entities relatively near the speaker and relatively farther from the speaker.

What Lyons postulates to be primitive is a pure deictic particle, 'neutral with respect to any distinctions of gender or proximity' (p. 95), and presumably neutral with respect to participant roles in the speech act. The particle serving this function will be realized differently by different children. In English it seems often to derive from the demonstratives *this* and *that* and take forms like /di/, /dʌ/, etc. It reflects the focus of the child's attention and serves to direct another person's attention. Its general meaning, according to Lyons, is simply 'look!' or 'there!' And it is often accompanied by a gesture of the eyes, head, or hands, towards the entity or event in question. This description of terms serving a pure deictic function converges with a semantic category uniformly described by empirical researchers as being among the first to appear in children's speech. Brown (1973) and Bloom (1973) both distinguish between two major categories of early combinatorial utterances. One includes relational constructions such as agent–action whose overall meanings emerge out of abstract relations between the words.

The other is a small category that Brown calls 'operations of reference' in which he includes 'nomination,' 'recurrence,' and 'non-existence.' Bloom proposes similar categories, only substituting the term 'existence' for 'nomination.' Typical examples of the three would be 'that kitty,' 'more kitty,' and 'no kitty.' In these types of utterances, meaning is tied more to the lexical meaning of 'that,' 'more,' and 'no.' The words that most commonly serve the function of nomination or existence are the deictic demonstratives and locatives of adult language with or without referential labels attached to them and the definite and indefinite articles.

Brown reports that there are two prototypic situations in which nomination occurs. One is initiated by an adult asking 'What's that?' or 'Where's X?' In either case the adult knows the answer. Such questions give children the opportunity to indicate that they know the name of the object, in the first case (a production task) directly, by supplying the name, in the second (a comprehension task) indirectly, by supplying the correct location. The adult who initiates this language game is usually interested in the child's ability to label and recognize labels. But the game incidentally accomplishes another important effect, namely practice in the joint focusing of attention.

The second prototypic situation in which nomination occurs is one that the child initiates. The child typically says 'see' or 'this' or 'that' or 'there' about some object, sometimes also appending a name. Bloom glosses this type of usage as a comment on the 'existence' of a referent. Brown stresses its labeling function, the 'linking' of names and referents. The deictic interpretation is not completely distinct from these but has a different emphasis: the function of registering notice and directing notice to an object. Both intentions, labeling and noticing, can probably be attributed to children on different occasions.

Of the three basic operations of reference, nomination can be judged to be the most primitive by the fact that among the children surveyed by Brown almost every child who has any basic operation of reference has this one. A child who expresses the operations of 'recurrence' or 'non-existence' is highly likely also to express the operation of 'nomination.' The conditional probabilities in the opposite direction are not as high. The words that most commonly serve the operation of nomination are the words that are the deictic demonstratives and locatives of adult language plus the definite and indefinite articles.

Some of the indexical terms of nomination (*this*, *that*, *there*) first occur

alone in early speech and then gradually with 'referential' terms. But in early speech the distinction between deixis and full symbolic reference is in effect neutralized. Many observers have reported that at first children talk only about the contemporaneous situation. Under these circumstances nouns are used, as demonstratives or deictic personal pronouns must be, only in the presence of the objects to which they refer. This can be considered a kind of elaborated de facto deixis. McNeill (1975) develops the same point in 'Semiotic extension' and incorporates it into a theory of how children make the transition from the achievements of the sensory-motor level of intelligence to the beginnings of language. The nominational utterances should be considered *elaborated* deixis because *different* terms are used to point to different objects. Therefore the rudiments of the symbolic function are present. But the indexical function is uniformly present as well. We cannot confidently say that the distinction between deixis and fully fledged reference is operative until the child exploits the potential of nominal referential expressions by using them in the absence of their referents.

The principle of developmental economy formulated by Werner & Kaplan (1963) and extended by Slobin (1973) applies at this early juncture of language development. Werner & Kaplan made the generalization that new functions are first served by old forms. Slobin added a reciprocal generalization: new forms first express old functions. Here this principle is seen to apply at the onset of language, in the very leap into language itself. Common names, which bear the possibility of reference latent within them, are first used in the familiar and preverbal function of pointing. This emphasis on the pointing function of early speech is not meant to contradict the view that one-word utterances are holophrastic. They may also carry out a predicative function. But that is a separate issue. All that is claimed here is that first utterances involve an indexical component, whether or not they are also interpreted as being predications about the object of reference.

Deixis and word realism

In the light of the preceding analysis of children's early utterances as *all* being indexical, we can take a new look at the phenomenon of word realism as described by Piaget. 'Word realism' describes children's tendency to treat names as inherent properties of objects. When questioned, children reveal a belief that if the name is changed, the

object is also changed, and that the name is held by virtue of the object's possessing various other of its properties.

Could the sun have been called 'moon' and the moon 'sun'?
– *No.*
– Why not?
– *Because the sun shines brighter than the moon.* (Piaget, 1967b: 81)

Stated in a different way, children who display word realism speak as if referential words were icons and indices rather than symbols. Although word realism is a meta-linguistic orientation that is incorrect from our point of view, it could be regarded as having a certain amount of validity – as a description of children's own initial language performance. In children's early output, names are indexical. They do not occur without their referents, and hence behave *like* attributes of the referents. Although to a much lesser degree, the same thing is true of referential terms in speech input to young children. If small children live, or at least speak, in 'the here and now,' adults will incline to join them there. But adults of course are also free to wander into the there and then.

It is possible to imagine that children arrive at word realism by the application of the same capacity for synthesis that enables them gradually to recognize various manifestations of an object as being the same object. By this account, word realism is an overgeneralization of object constancy.

The disparate manifestations of an object that are assimilated in the concept of that object comprise auditory and tactile impressions as well as various visual ones. On any single occasion of experiencing the object, not all of these manifestations are experienced simultaneously. This is the crux of the problem of object constancy. Children must *synthesize* the various perceptual manifestations into an integrated conceptual unit.

A name is yet one more (auditory) manifestation whose occurrence correlates strongly with other manifestations of an object. Along with everything else, the name is incorporated in the synthesis too. Although children do not *always* hear the name whenever the object is present, neither do they see each of its visual projections whenever they encounter the object. The final synthesis, when it is appropriate as well as when it is erroneous, is their own contribution, and does not depend on perfect correlation.

Before children produce language themselves they have no direct control over the apparent manifestation of an object that is that object's name. Unable to manipulate it, they have no opportunity to discover that it is detachable from its referent. When children do begin to speak, and thus to operate on names, they tend to use them in the presence of their referents and so the names remain, in effect, still attached to the referents. Only after children begin to use referential terms in their full symbolic capacity, i.e. in the absence of their referents, is the way paved for them to abandon word realism. But the meta-linguistic reorientation lags behind their behavioral achievement.

Fully fledged reference can be thought of as the liberation of the name from the requirement that its referent be present. We can regard the process of arriving at full referential expression as analogous to the process of interiorization, described by Piaget, through which children arrive at mental representations. In the latter case the image of an object becomes separate from the object; in the former, the name of the object becomes separate from the object.

The symbolic component of indexical symbols

A pure index, such as the gesture of pointing, can be used to point to anything – a person, a location, an object. The deictic terms are not pure indices. As was discussed above, they are indexical *symbols*. Their meanings are not totally contextual. It is at the symbolic level that their general meanings are defined. Thus the personal pronouns are indices of persons. In particular *I* indexes the person uttering it, *you* the person addressed. These roles in the speech act are distinguished in all languages. *Here* and *there* are indices of location. *This* and *that* are indices of entities. Both pairs of terms involve a contrast along a dimension that is defined with respect to a deictic variable: proximity to the speaker. *In back of*, *in front of*, and *at the side of* are an interesting set of terms in that they can be used in a purely symbolic sense, or in an indexical sense. They express a spatial relationship with respect to some point of reference. In their symbolic sense the relationship is defined in terms of attributes inherent to the reference object, its permanent directional features. In the indexical sense of these expressions the spatial relationship is defined jointly by the position of the reference object and by the position of a participant in the speech act.

The motion verbs *come*, *go*, *bring*, and *take*, as Fillmore (1966, 1971e)

has demonstrated, also involve deictic components in their meaning. To give a brief illustration, the question 'Are you coming to the beach?' presupposes something about the position of the speaker at the time of the utterance or at the time referred to in the utterance. The speaker must be at the location, the beach, at one of those two times in order for the sentence to be appropriate, or, at least, he must expect to be there. In other words, these verbs involve components of person deixis, place deixis, and time deixis as well. The semantics of these various deictic terms will be discussed in more detail in later chapters.

The problem of learning the correct use of the deictic terms does not turn on the indexical function per se but rather involves discovering the symbolic distinctions that are mapped by the deictic terms. However, the indexical properties of the deictic terms account for the special difficulty of discovering these distinctions, a type of difficulty not met with in purely symbolic terms. This will be discussed in the next section.

Deixis and egocentrism

To use the deictic terms correctly, children must incorporate perspective as a component of meaning. They are addressed by name and as *you*, but must learn that while the name is a label for them, the *you* is not. The people who speak to children refer to themselves as *mommy* or *daddy*, etc., or as *I*. Children can address them as *mommy* or *daddy*, but not as *I*. To use the deictic terms correctly, with themselves at center, children must have grasped how other people use them, all with themselves at center. The ability to do this would seem to correspond exactly with an ability young children have been shown to lack. According to the analysis that children are cognitively egocentric, they cannot adopt points of view other than their own. De Villiers & de Villiers (1974) have also observed the relevance of children's mastery of deictic terms to an understanding of the boundaries of egocentrism.

It was in the sphere of language that Piaget first identified the phenomenon of cognitive egocentrism. Studying children's speech he observed patterns of repetition, of monologue, and of collective monologue that did not appear to serve a communicative function. He characterized noncommunicative speech as egocentric speech. The concept of egocentrism was subsequently extended by Piaget and other researchers to describe many aspects of children's cognitive orientation

and behavior: moral judgment, reasoning, communication. Attempts have been made, with inconsistent results, to determine whether a single egocentrism factor underlies the various behavioral manifestations that have been attributed to egocentrism.

Recently a revisionary tide has begun, with a number of researchers demonstrating that children do attend to the speech of their interlocutors, and respond appropriately, both in terms of content and construction of messages (Garvey & Hogan, 1973; Maratsos, 1973; Keenan, 1974). Their evidence for nonegocentrism comes from research on topics identical to those in which the concept of egocentrism was defined and refined. The evidence that can be brought to bear from children's knowledge of deictic terms is a new kind of evidence, not discussed in the original formulations of egocentrism.

The full spectrum of egocentric phenomena ranges from children's inability to take someone else's perspective in the concrete, spatial sense to their inability to adopt a different perspective in the figurative sense. The classic example of the former is Piaget's three-mountain demonstration. Piaget showed children a three-dimensional model of a landscape with three mountains, a tree and a house. He then asked them to select a picture which represented what they saw in looking at the mountains. Later, he asked them to select pictures representing what a doll standing at some other location would see. Subjects showed different degrees of success in making an appropriate choice. The most illuminating failure was for children consistently to select the picture representing their own view. An example of failure to adopt another person's perspective in the figurative sense is the inability to guess what they might like as a present, as when a small boy, in an experimental task, selects a toy truck from a number of items as a good gift for his mother (Flavell, Botkin, Fry, Wright & Jarvis, 1968).

Flavell assumes that nonegocentrism, or role-taking, or to coin a term, 'perspectivism,' emerges first in the concrete sphere of visual perspective relative to objects in the environment. Subsequently it extends to perspective in the figurative sense. The language phenomenon, deixis, does not fall conveniently into either category. It lacks the component of an external physical situation which is constant despite changes of orientation and which permits changes of orientation to be reversed. On the other hand, it does not depend on making inferential judgments about the inner state of another person. An understanding of children's mastery of language that is inherently nonegocentric should

contribute to our general knowledge of children's emergence from a state of relative egocentrism.

Deixis and semantic theory

In the type of semantic theory which focuses on meaning as it resides in words and sentences, deictic terms are a marginal category, of no special theoretical interest. A different type of semantic theory attempts to represent how meaning resides in the integration of utterances with context (broadly defined). In such a theory the deictic terms suddenly become central. Rommetveit (1968) is one proponent of the view that the unit of communication is not the sentence, but the 'message' comprising 'two separate but mutually dependent components, namely the act of speech itself and a nonlinguistic component of the situation.' Feldman (1971) made the same point in arguing that most sentences are 'underdetermined' in that their meaning cannot be fully explicated on sentence-internal grounds, 'without reference to their existence in some speaker–hearer context.' She criticized linguists for dealing exclusively with fully determined sentences. In doing so she stopped short of the more radical claim that no sentences are fully determined. It is through the work of Grice (1967, 1971) and its interpretation by Gordon & Lakoff (1971) that this approach to semantics has come to be widely known and to influence some branches of linguistics and psycholinguistics. Grice's approach is encapsulated in the statement that sentences don't have meanings, only utterers do. Grice's tacit emphasis is on production; Rommetveit's on comprehension. But both stress that meaning does not reside in the sentence itself. And, as Rommetveit says, 'the most immediately transparent articulation between the act of speech and its behavioral setting is found in conjunction with components of linguistic media which are called "deictic signs."' In one sense of 'meaning,' the sense advanced by speech act theorists, the meaning of the now-famous sentence 'It's hot in here' depends on the context in which it is uttered, including the identity of the addressee and his relation to the speaker. In a similar sense, the meaning of *you* also depends on the context in which it is uttered. This is not merely a standard phenomenon of reference. Different acts of uttering *chair* may single out different chairs, just as different acts of uttering *you* single out different individuals, but the utterance does not establish the chair as a chair while it does establish an individual as the addressee.

It is the deictic terms that most clearly demonstrate that the principle of extra-linguistic contextual determination of meaning extends from the level of sentences to the lexical level.

These broad issues constitute the background for the series of investigations on the acquisition of deictic terms reported in the following chapters. The experiments test children's comprehension of the (singular) personal pronouns, the deictic use of *in front of* and *in back of*, the contrastive use of the demonstratives *this* and *that* and the locatives *here* and *there*, and their knowledge of the conditions for using *come* vs. *go* and *bring* vs. *take*. As far as possible, given that some children left school during the period of study, the same children were used as subjects in each experiment in order to permit intra-subject analyses. This allows us to see if there are invariant sequences of acquisition across individuals, in other words to determine if knowledge of one class of deictic terms is conditional upon knowledge of another.

A number of other topics are also taken up. Within sets of deictic terms, the order of acquisition is used to evaluate various current proposals about semantic development. Several hypotheses are discussed in detail, notably those of H. Clark and E. Clark: the hypotheses that unmarked terms are learned before marked terms, that conceptually positive terms are learned before conceptually negative ones, and, in general, that cognitive complexity is directly mirrored in semantic complexity which in turn is directly reflected in order of acquisition. Rather than elaborate these topics further here, I will discuss them in detail in the context of the actual experiments.