

data make visible the beauty and orderliness of language acquisition as tiny apparently unrelated details begin to fit together into a coherent pattern. Best of all, diary data are alive with a toddler's first impressions of the people, places, objects, and events which make up her world. The union of the scientist's discipline with the humanist's world view is possible for those who choose to work with diary data in a modern age.

Chapter 3

Transcription as Theory

ELINOR OCHS

Naturalistic Speech as a Data Base

An area of considerable interest and controversy within linguistics concerns the nature and adequacy of data for positing linguistic rules or norms (Chomsky, 1965; Hymes, 1972; Labov, 1970, 1972b). Should the linguist base generalizations on what speakers say they do (i.e., native-speaker intuitions) or on what they actually do (naturalistic speech behavior)? These two sources are employed in research relevant to language use in context as well as to other linguistic concerns. Those whose work falls under the heading of pragmatics (for adult speakers) tend to draw rules of use from their own or others' judgments (e.g., Chafe, 1976; Kuno, 1976; Lakoff, 1972). Those whose work is sociolinguistic tend to base generalizations primarily on actual speech performance (e.g., Blom and Gumperz, 1972; Labov, 1966; Philips, 1972).

A pervasive sentiment among those who draw from performance data is that the data they utilize are more accurate than intuition data: Their data constitute the real world—what is as opposed to what ought to be. There are many issues that could be entertained concerning this orientation. Here I would like to address the problem of what in fact are the performance data for such researchers: Even here the internal issues are manifold. There is the

issue of data collection: the means of observing and recording, the conditions (setting, time, etc.) under which the data are collected, and so on. The influence of the observer on the observed is, of course, a classic concern within the philosophy of science (Borger and Cioffi, 1970; Popper, 1959).

The utilization of mechanical means of recording may appear to eliminate some of these problems. An audiotape recorder registers a wide range of sounds and a video tape recorder registers visual behavior falling within its scope. (We are ignoring for now the problem of camera placement; use of zoom versus wide-angle lens, and so on.) A stand taken in this chapter is that the problems of selective observation are not eliminated with the use of recording equipment. They are simply **delayed** until the moment at which the researcher sits down to transcribe the material from the audio- or videotape. At this point, many of the classic problems just discussed emerge.

A major intention of this chapter is to consider with some care the transcription process. We consider this process (a) because for nearly all studies based on performance, **the transcriptions are the researcher's data**; (b) because **transcription is a selective process reflecting theoretical goals and definitions**; and (c) because, with the exception of conversational analysis (Sacks, Schegloff, and Jefferson, 1974), **the process of transcription has not been foregrounded in empirical studies of verbal behavior**.

The focus of this discussion will be on the nature of transcription for child language behavior. The lack of attention to transcription among developmental psycholinguists is widespread. Rarely do we find transcription procedures discussed in detail or the transcriptions themselves offered for study (but see Bloom, 1970, 1973; Scollon, 1976; Weir, 1962). This lack of attention has a number of consequences for the field of child language.

On a very practical level, we have not developed a set of conventions for representing the verbal and nonverbal actions of young children. We have no metalanguage, no easy way to identify and compare actions and interactions. An important aim of the present discussion is to present a set of symbols for transcribing and a format for transcribing. The notation and the format are appropriate for general research purposes. **A transcript that includes the information presented in what follows should be considered as a "basic transcript."** It will not register information needed for more specialized research interests. One of the important features of a transcript is that it should not have too much information. A transcript that is too detailed is difficult to follow and assess. A more useful transcript is a more selective one.

Selectivity, then, is to be encouraged. But selectivity should not be random and implicit. Rather, the transcriber should be conscious of the filtering process. The basis for the selective transcription should be clear. It should reflect what is known about children's communicative behavior. For example, it should draw on existing studies of children's cognitive, linguistic, and social development. Furthermore, the transcript should reflect the particular interests—the hypotheses to be examined—of the researcher.

One of the consequences of ignoring transcription procedure is that researchers rarely produce a transcript that does reflect their research goals and the state of the field. Furthermore, developmental psycholinguists are unable to read off one another's transcripts the underlying theoretical assumptions.

Yet, these skills are critical in understanding and assessing the generalizations reached in a particular study. As already noted, the transcriptions are the researcher's data. What is on a transcript will influence and constrain what generalizations emerge. For example, the use of standard orthography rather than phonetic representation of sounds will influence the researcher's understanding of the child's verbal behavior. One area of behavior that is "masked" by the use of standard orthography is sound play (Keenan, 1974). The use of standard orthography forces a literal interpretation on utterances that otherwise may be simply objects of phonological manipulation. The use of standard orthography is based on the assumption that utterances are pieces of information, and this, in turn, assumes that language is used to express ideas. In sound play, the shape rather than the content of utterances is foregrounded and the function of language is playful and phatic (in the case of sound play dialogue) rather than informative: Where the researcher uses standard orthography, not all instances of sound play can be easily seen. This assumes importance when a case of sound play is reported in the literature, as in my own situation. It is difficult to assess whether its rare appearance in the literature reflects the nature of children's verbal behavior or the nature of psycholinguistic transcription procedures.

The Basic Transcript

In this section, the organization of a baseline transcript is treated. In this discussion, the work of several researchers in child language is incorporated. In particular, I am drawing on the notational systems developed by Bloom, Lightbown, and Hood (unpublished manuscript), Reilly, Zukow, and Greenfield (unpublished manuscript), Keenan and Schieffelin (1976), Girton (personal communication), and Scollon (1976). Additionally, the highly detailed system of notation developed by Jefferson (Sacks, Schegloff, and Jefferson, 1974) for adult conversation is a major source. The reader is encouraged to become familiar with this system in greater depth to develop skills in noticing and listening.

Page Layout

A first item to attend to in organizing and appraising a transcript is the way in which the data are physically displayed on each page. As members of a culture, we, the transcribers, bring into the transcription process a biased spatial organization. We display our data with the cultural expectation that

certain items will be noticed before others and that certain items will be seen as part of particular units and categories (e.g., utterances, turns at talk).

Top to Bottom Biases

Across many cultures, there is a convention whereby written language is decoded from the top to the bottom of each inscription. The reading of conversational transcripts takes no exception to this norm, and, generally, the history of a discourse is unfolded in a downward direction. Utterances that appear below other utterances are treated as occurring later in time.

As our eyes move from top to bottom of a page of transcription, we interpret each utterance in light of the verbal and nonverbal behavior that has been previously displayed. In examining adult-adult conversation, overwhelmingly we treat utterances as **contingent** on the behavioral history of episode. For example, unless marked by a topic shifter (Sacks and Schegloff, 1973), the contents of a speaker's turn are usually treated as in some way **relevant** to the immediately prior turn. The expectation of the reader matches the expectation of adult speakers (Grice, 1975), and by and large inferences based on contingency are correct. These expectations and assumptions are reflected in the format in which adult conversations are typically displayed. Speaker's turns are placed below one another, as in dramatic script (from *Love's Labor Lost*, I. xxi):

ARMADO: Boy, what sign is it when a man of great spirit grows melancholy?

MOTH: A great sign, sir, that he will look sad.

Here, for example, Moth's utterance is interpreted with respect to Armado's previous utterance. The reader makes such links as his eyes move line by line down the page. If the reader misses a reading or has not understood an utterance, he frequently looks back to the immediately preceding line (above). Practices such as linking back (above) and linking forward (below) again reflect expectations of turn-by-turn relevance.

When we examine the verbal and nonverbal behavior of young children, important differences emerge with respect to adult communicative norms. In particular, the expectation that a speaker usually makes utterances contingent on prior talk does not match that for adult speakers. This is particularly the case in interactive situations involving a child and one or more conversational partners. Young children frequently "tune out" the utterances of their partner, because they are otherwise absorbed or because their attention span has been exhausted, or because they are bored, confused, or uncooperative (cf. Keenan and Schieffelin, 1976; Ochs, Schieffelin, and Platt, Chapter 11 of this book; Piaget, 1926).

We cannot necessarily count on an immediately prior utterance, particularly that of another speaker, to disambiguate a child's verbal act. We also cannot count on the child to signal noncontingency in a conventional manner. This means that we cannot even be certain that an utterance of a child that follows an immediately prior question is necessarily a response to that question. The more the response is semantically tied to the previous question, the greater the number of nonverbal communicative cues (e.g., eye contact), the higher the probability that the utterance is a response. But every transcriber of child language behavior knows that, for many many cases, it is not clear what intentions underlie a child's utterance.

The relative weakness of the relevance norm among young children presents a number of difficulties for anyone trying to sustain a state of mutual involvement and dialogue with such persons. Those who interact habitually with young children are aware that they often have to suspend the expectation that their utterances will be attended to. Similarly, the reader of a script involving at least one child as a participant has to suspend the expectation that sequentially expressed utterances are typically contingent and relevant.

The connection between this discussion and the transcription process is that the format of a transcript influences the interpretation process carried out by the reader (researcher). Certain formats encourage the reader to link adjacent utterances and turns, whereas others encourage the reader to treat verbal acts more independently. For example, the standard "script" format described earlier tends to impose a contingent relation between immediately adjacent utterances of different speakers. As pointed out previously, such an imposition is appropriate to the extent that it matches the conventional behavior of the speakers themselves. Such a transcript is thus far more appropriate to adult western speech than to the speech of language-acquiring children.

A transcript of children's speech should not match that of adult speech. We should use what we know about children's cognitive capacity and communicative skills and shape our transcripts in accordance with this knowledge. To this end, a transcript that separates more radically utterances and turns is preferred over one that groups them in the same visual space. Such a statement may sound quite odd from a researcher committed to the study of utterances in context and discourse units of meaning. I am in no way suggesting that a researcher should not make links between utterances of young children and others. Rather, I am suggesting that a transcript should not impose such links where alternative processes may be going on. That is, a transcript should not skew the reader to carry out a line of inference that runs contrary to what we know about children's communicative competence. Until we understand more richly the cues children produce when engaged in egocentric (Piaget, 1926), private (Vygotsky, 1962), and social speech (Braunwald, unpublished manuscript 1976), our transcript should be relatively neutral with respect to the contingency of children's talk.

A modification of Bloom's (1970, 1973) format is suggested as a starting point to satisfy this end. In Bloom's work, the behavior of the child and co-conversationalist is presented side by side in parallel columns. A modification of this format is represented in Figure 3.1 (p. 59). The advantage of this format is that speakers' turns are pulled out of the vertical scriptlike display. Turns are separated in individual participant columns, and the reader must shift his eyes from one column to the other in following the evolution of an interaction. In this way, contingency across speakers' turns is not promoted by the transcript. The assessment of pragmatic and semantic links becomes a more self-conscious process.

Notice that verticality is not eliminated in this format. Though turns by different speakers are presented side by side, sequentiality is expressed by putting utterances on different lines. Thus, for turns that are simultaneously produced, the reader simply moves his eyes along the same line(s) from one participant column to the other. For sequentially produced turns, the reader moves his eyes from one column across to the other column and *down* to the following line. Further, within each turn, utterances that follow one another in time are placed below one another. The suggested format, then, makes considerable use of verticality. The advantages are twofold.

First, the reader can see more easily the prior verbal behavior of the child. In interpreting an utterance of a child, the reader of a transcript can assess its place with respect to what the child has been saying or doing as well as with respect to the talk or behavior of a co-present speaker. That is, the suggested format provides greater access to a stream of behavior that the talk of another may have interrupted. In this way, the researcher may assess whether the child's behavior is contingent on the talk of another or whether it is contingent on prior verbal or nonverbal behavior, or whether it is contingent on both or neither.

Second, while verticality within each speaker column may encourage the sorts of discourse links described above, the probability of such links existing is much greater than in cross-speaker links. In an earlier study (Keenan, 1974, 1975; Keenan and Klein, 1975), the development of discourse coherence was documented for twins (aged 2; 9 at onset) over a period of 1 year. The results indicate that young children link their utterances to their own prior talk before they link their utterances (in comparable ways) with the speech of others. Further, studies of children at the one-word stage (Atkinson, Chapter 10 of this book; Bloom, 1973; Greenfield and Smith, 1976; Keenan and Schieffelin, 1976; Ochs, Schieffelin, and Platt, Chapter 11 of this book; Scollon, 1976, Chapter 9 of this book) indicate that the expression of a single proposition frequently covers the space of several utterances of the child. This process may be masked in the classic vertical "script" format. The reader may have to background the utterance of a co-present party that may be inserted into this propositional sequence. (The other party's utterance may or may not be relevant to, may or may not be part of, the child's propositional sequence.) In summary, the use of

verticality within speaker columns is more solidly grounded on what we know about children's communicative development.

Our discussion of competence and verticality is intended for the transcription of children's speech between the ages of approximately 14 months and 3½ years. As children acquire the communicative skills of adults, the transcription format should be adjusted. In no sense should there be one mode of transcription that captures all research aims and all developmental stages. The purpose of the current discussion is simply to bring a general format to the consciousness of the field as a **point of reference** for future research.

Left to Right Biases

Let us turn to other cultural influences on the transcription of children's verbal and nonverbal behavior. The European culture of literacy socializes its members to encode ideas not only from top to bottom, but from left to right of the writing surface. For a page of transcription, this directionality means that within each line utterances to the left of other utterances have been produced earlier. Similarly, words to the left of other words on the same line have been uttered earlier. Leftness is linked with priority and also with inception of a statement or entire discourse.

Very close to its association with priority and inception is the link between leftness and prominence in written expression. This is clearest within the sentence in English, where subjects or topics normally appear to the left of their predicates in the declarative modality. Topics constitute the major arguments of a proposition, and subjects control verb agreement and a number of other syntactic processes (Keenan, 1976).

These associations may influence the overall organization of a transcription in at least two ways.

PARTICIPANT COLUMNS

Most studies of child language involve the child interacting with just one other individual, usually an adult (cf. Bloom, 1970, 1973; Bowerman, 1973b; Brown, 1973; Greenfield and Smith, 1976; Scollon, 1976, for example). In this situation, the transcriber who has opted for parallel placement of speaker turns (see page 46) has to decide which speaker is to be assigned to the leftmost speaker column and which to the right.

A brief review of the adult-child interaction literature indicates that, with some exception, the overwhelming tendency is for researchers to place the adult's speaker column to the left of the child's speaker column. I would like to point out here that this tendency may not be arbitrary. Rather, it may reflect perceived notions of dominance and control (Corsaro, Chapter 18 of this book). That is, the researcher may be quite subtly influenced by an adult's status as caretaker or competent speaker in letting this figure assume the predominant location on the page of transcription.

The placement of the adult in the leftmost position may not only reflect but actually **reinforce** the idea of the adult as a controlling figure. How could this reinforcement come about? Recall that leftness is associated not only with prominence (e.g., placement of subject in English standard active declarative sentences), but with **temporal priority** in English language transcripts. Each line of transcription starts at the left margin and moves towards the right. The decoding of each line as well is affected by this directionality (MacWhinney, 1977). If the reader wants to look back at prior talk, then the eyes are oriented to the left. If the reader wants to locate the starting point of an utterance, the eyes move left until they locate the initiation of talk following a pause, interruption, or final interactional boundary.

These expectations concerning where talk initiates could very well affect judgments concerning the initiation of a **sequence** of talk. A tendency for the western reader may be to turn to the left to locate such initiation points in a verbal interaction. In particular, readers may turn to talk in the leftmost speaker column as a "natural" location for opening up an interactional sequence. Looking to the righthand column of talk, is, in this sense, a less "natural" move in the pursuit of an interactional opening.

This means that whichever speaker is assigned to the leftmost column has a better than average probability of being an initiator of a sequence of talk. In transcripts in which the adult is assigned to this speaker column, the adult becomes the more probable occupant of the initiator role.

But how is the role of initiator tied to the notion of control (as already suggested)? The first move in an interactional sequence becomes a point of reference for the remainder of the episode at hand. The first move becomes a social act that future talk must attend to. The assessment of control may be carried out by examining, first, the extent to which the first move imposes a relevant response from the conversational partner (Corsaro, Chapter 18 of this book) and, second, the extent to which the initiator actually succeeded in securing the expected response (Westerman and Fischmann-Havstad, 1976).

Where an adult is selected as initiator, the adult utterance becomes the frame within which subsequent behaviors are assessed. This means that adult utterances are projected forward and children's utterances projected backward. In this framework, questions such as "How controlling is the adult's behavior?" or "How constrained is the child's behavior (by the adult participant)?" become relevant.

In this sense, who is selected as an interactional initiator may affect the frame of reference for assessing control among conversational partners. If the child rather than the adult were to be selected as the interactional initiator, then other questions would be relevant. The child's behavior would be seen as constraining the subsequent behaviors of the adult to varying extents. Adult behavior would be treated as to varying degrees contingent upon and attentive to previous moves of the child. This type of contingency is known to be relevant in early child-caretaker interactions. Numerous accounts of the preverbal infant (Lewis and Rosenblum, 1974; Schaffer, 1977b; Shotter, 1974; Stern,

1974) attest to the fact that children do impose themselves on the attending caretaker. Shotter, for example, details the child's early use of "natural" powers in constraining the behavior of those around him. Stern documents the early use of eye gaze by the child to initiate social contact.

In summary, the perceived dominance of the adult may lead a transcriber or researcher to locate adult talk to the left of the child's talk on the transcript. This location, in turn, becomes a "natural" candidate for an interactional starting point. Starting points become constraining rather than constrained variables in an assessment of social control.

The tendency to use the adult as a point of orientation is great regardless of whether the transcriber uses a parallel column or traditional script format. Hence, interactions are typically described as **adult-child** rather than **child-adult** interactions. Further, witness studies of imitation (e.g., Bloom *et al.*, 1974; Ervin-Tripp, 1964; Fraser *et al.*, 1963). In the bulk of these studies, the adult utterance becomes the reference point, and the child's utterance is measured in terms of its semantic and syntactic novelty. It is assumed that the issue of imitation concerns the repetition of adult utterances by the child rather than the reverse (Keenan, 1975). Third, studies of adult speech interaction with children are seen as studies of adult speech to children, of **input** (cf. Snow and Ferguson, 1977). Viewed in this light, the role of the adult as a recipient of a directed social behavior emerges as a minor concern.

Again the discussion here is aimed to heighten awareness of the conceptual underpinnings of a transcript. Transcription procedure is responsive to cultural biases and itself biases readings and inferences. Whether a researcher places the adult behavior to the left or to the right of the child's behavior is not the basic concern addressed here. Rather, the central concern is the researcher's awareness of this transcriptional act and its potential consequences.

My own preference is to place the adult speech column to the **right** of the child's speech column. In this way, transcription biases do not coincide with a priori cultural biases. In so doing, the transcriber moves toward equalizing the relationships between child and adult. The researcher may be biased by the leftist placement of the child's verbal behavior in searching for a sequential opening point. However, the researcher will be biased by cultural definitions of the adult role (e.g., caretaker, nurturer, teacher), motivating rightward orientation of the eyes.

PLACEMENT OF NONVERBAL AND VERBAL BEHAVIOR

In studies of child language development, there is an overwhelming preference for foregrounding verbal over nonverbal behavior. This is due to at least three sources:

The first and most obvious is the **goal** of the research at hand. The researcher is, after all, concerned primarily with language. Nonverbal context is usually considered to the extent that it directly relates to the utterance produced.

A second source is the **method of recording** child behavior. Child language studies have relied upon three basic means of obtaining data: diary method, audiotape recording plus notetaking, and videotape recording. While the use of videotape allows a relatively detailed view of nonverbal behavior and environment, it is still a relatively restricted mode of documentation within developmental psycholinguistics. The large majority of studies used exclusively or primarily audio recordings of children's speech situations, accompanied by observational notes of the nonverbal activity. The physical constraints on notetaking reduce the quality and quantity of nonverbal context captured. While the researcher's eyes are focused on notes, contextual changes in the situation at hand are not being taken in. This means that utterances being recorded in the meanwhile will not be accompanied by observational recording. The nonverbal context in this sense becomes less rich than the verbal behavior itself. This methodological state becomes a basis for making verbal behavior the center of attention, with the nonverbal context presented as an aid to interpreting the ongoing talk.

A third source of verbal foregrounding stems from using **analyses of adult communicative behavior as models**. In nearly all linguistic, sociological, and psychological treatments of adult-adult speech behavior, nonverbal considerations in the immediate situation are minimized or ignored. Where nonverbal behavior is attended to (Carpenter and Just, 1972; Duncan, 1975; Kendon, 1975, for example), such behavior tends to be treated as a set of variables that cooccur with language but do not necessarily constitute part of the idea conveyed. By and large, the message content is considered to be conveyed through language.

One of the major advances within child language in the past decade has been the understanding of the communicative import of nonverbal behavior among young children. There are now numerous documents of the communicative skills of children before language emerges (e.g., Bates, Camaioni, and Volterra, Chapter 5 of this book; Carter, 1974; Stern, 1974). These studies show that nonverbal behavior may be an **alternative** rather than an accompaniment to verbal behavior. Children are able to employ gesture, body orientation, and eye gaze to perform a variety of communicative acts (e.g., pointing out the existence of some object, requesting some future action from the intended addressee, offering, demonstrating, etc.). The emergence of language is understood as a move away from a primary reliance on nonverbal means towards greater reliance on verbal means to convey an intention. In the course of this process, verbal means are employed conjointly with nonverbal means and **together** they convey the child's intentions.

In terms of utilization of the immediate situation to express an intention, then, children and adults differ. While both depend on the context of the situation in communication, children's dependence is much greater. The younger the child, the greater the reliance. We would expect that transcriptions of adult-adult conversation and transcriptions of child-adult or child-child conversation should reflect this distinction. In particular, nonverbal dimen-

sions of a speech situation should play a far greater role in transcriptions of children's conversational interactions than in transcriptions of adult-adult conversation.

In looking over numerous psycholinguistic accounts, I can find no consistent way that nonverbal information is presented in representing children's social and private behavior. In some cases, the situation is described in prose style as in Carter (1974, Chapter 6 of this book), Bates, Camaioni, and Volterra (Chapter 5), or, for example (Camaioni, Chapter 15):

B1 offers a puppet to B2 who touches it and looking into B1's eyes says *Guarda* ('Look')

Other formats separate the child's verbal output from nonverbal actions and context: One variant (cf. Dore, 1977; Scollon, 1976) places the nonverbal information to the **right** of the child's verbal behavior, (Dore, 1977, p. 152):

Q: *What a muffet?*

R: *There's a muffet* [while pointing at it]

Another variant (cf. Bloom, 1970, 1973; Bowerman, 1973; Schieffelin, Chapter 4 of this book) reverses this format, placing nonverbal information to the **left** of the child's utterances (Bloom, 1973, p. 217):

[A taking empty cup from M]	<i>baby/</i>
[A sneezes]	
<i>God bless you!</i>	
[A looking into empty cup]	<i>baby cup/</i>
<i>Baby cup?</i>	
[A holding cup out to M]	<i>Mommy/</i>
<i>Mommy what?</i>	
	<i>baby/</i>

A third variant, adopted by Garvey (1977a, p. 38) and Greenfield and Smith (1976, p. 85) respectively, is to place the nonverbal information **above** the child's utterances.

MOTHER	NICKY
	[N sees Lauren and Matthew through window]
	<i>Lara</i> [Lauren]
<i>There's Lauren.</i>	<i>mama</i> [Matthew]
M(5:2)	F(5:7)
[inspects stuffed animals]	[busy with suitcase]
1. <i>Teddy bear's mine:</i>	2. <i>the fishy is mine.</i>
3. <i>No, the snakey snakey is yours.</i>	

Each of these formats has its advantages and disadvantages. The descriptive, prose style has the benefit of integrating nonverbal and verbal behavior in one center of attention (the same paragraph). However, where we are observing many utterances, this format obscures the regularities of structure and use. Such a format makes many types of quantitative analyses of speech difficult to accomplish. It seems best suited for the very early stages of language development where words appear infrequently and carry relatively little communicative load (relative to the context of the situation).

From a methodological standpoint, then, there are advantages to separating out utterances from other sorts of information; hence, the appeal of placing nonverbal information apart from relevant verbal acts. However, as soon as we do this, we encounter different problems and biases. Two of the three format variants that separate verbal and nonverbal information make use of the right and left sides of the page. Here we can see problems related to the left-to-right orientation in written language. Material presented to the left tends to capture the reader's attention before material to the right does (on the same line of transcription). Where verbal material is presented to the left, utterances are given a preliminary reading without context, and contextual information is added later. At this point, the reader may reinterpret the utterance(s) in the light of this new information. Where nonverbal information is presented to the left, the reader has access to the context of situation before viewing the child's utterance(s).

I would like to point out here two disadvantages that both of the left or right variants share. First, in placing nonverbal behavior in a separate column apart from verbal behavior, the transcriber heightens the perception of these behaviors as distinct. It appears as if the nonverbal behavior of the adult or child emerges as one stream of behavior and verbal behavior emerges as a parallel yet different stream. Second, regardless of its left or right placement, nonverbal behavior is backgrounded in such transcriptions through the use of square brackets. Nonverbal material is placed inside square brackets. As such it is treated as of only indirect importance: It is what you have to know in order to interpret the utterances at hand (the important data). These two transcription practices reflect the current orientation toward children's **discourse**. Furthermore, they have major consequences for our understanding of communicative development. We are concerned not with interaction but with **texts**. We interpret Hymes's notion of **communicative competence** (1972) as **discourse competence**. And when we talk about the growth of conversational skills, we focus on the exchange of utterances, on dialogue, backgrounding the development of social routines and social interactions in which talk is but one of the social modalities at play.

The consequences appear on the analytic level as well as on the level of global orientations. Consider, for example, the notion of "sequence." As pointed out by Westerman and Fischmann-Havstad (1976) and Camaioni (Chapter 15 of this book), researchers in the area of child language take a sequence to be a set of two or more utterances. Here again we can see the

influences of adult models of interaction in which sequences are visualized as utterance pairs, such as invitation/acceptance—decline, question—answer, greeting—greeting, offer/acceptance—rejection, and so on (Sacks, Schegloff, and Jefferson, 1974; Schegloff and Sacks, 1973). These sequences are largely drawn from talk of adults using a telephone to communicate. Under these conditions, nonverbal behavior plays an insignificant role in the communicative process. Compare this situation with the typical context in which children's utterances are recorded. In the latter context, children are interacting with or playing alongside a co-present party. Under these conditions, nonverbal behavior plays an important role. We frequently observe entire acts that are carried out nonverbally, for example, a tug used as an attention-getting device, a grimace as a rejection. These behaviors should not be relegated to "bracketed" status, nor should they be considered as necessarily belonging to a separate sequence of acts. Rather, sequences should incorporate both verbal and nonverbal modalities. Westerman and Fischmann-Havstad stress that the integration of nonverbal and verbal material is particularly important in understanding topic initiation and uptake. They suggest an amplification of Keenan and Schieffelin's earlier work on topic (1976), in which topic introduction and uptake is considered only in terms of verbal introduction and verbal uptake. Westerman and Fischmann-Havstad point out that nonverbal behavior may introduce a topic into the interaction. For example, some action on the part of the child may become a subsequent center of attention by a co-present participant. Subsequent attention to the action may be expressed through a verbal act (e.g., *What are you doing?*, *How pretty!*, *Go away!*, etc.) or through a nonverbal act (e.g., frowning, pushing away, turning toward, shifting gaze toward, etc.). Similarly, a child may evidence attention to, and/or willingness to, comply with some previous utterance or nonverbal act through nonverbal actions. Requests, for example, often take this type of response. Hence, we may find parts of sequences occupied by either nonverbal or verbal behavior. In separating and backgrounding the nonverbal material, the transcriber inhibits our awareness of such sequences and, consequently, of our understanding communicative competence over developmental time.

It would appear that the most reasonable solution to the issue is to place verbal and nonverbal data in the same participant column, as opted by Garvey (1977) and Greenfield and Smith (1976). Why not simply remove the brackets from the nonverbal descriptions and document all behavior for each participant in their respective participant columns? I find that this format works only when the nonverbal material to be presented is minimal. Even with some mechanism (e.g., different type set, upper or lower case) for signalling shifts in modality (nonverbal, verbal), where a lot of nonverbal data is transcribed, it is difficult to distinguish utterances from other actions and contextual features. A practical fact to be reckoned with is that it takes more space to represent nonverbal behavior than to represent verbal behavior. This might be minimized by a well-developed system of notation for nonverbal features. However, there are just so many features that one would want to symbolize

in codelike fashion. In the typical transcript, utterances would be surrounded by notes on nonverbal context, and the researcher would be faced with sorting out the forest from the trees in many of the analyses to be carried out.

I have emphasized that an above or below representation of nonverbal and verbal behavior becomes increasingly unfeasible the greater the amount of nonverbal information there is to report. We should consider, before going on, the extent to which we need to deal with quantities of nonverbal data. One could argue, for example, that only in the very early stages of communicative development is the detailed recording of nonverbal context critical to assessing intentionality. In looking over a great many transcripts, I see that while reliance on the immediate context lessens over developmental time, it is still the case that children continue to rely heavily on the immediate setting well into the multiword stage. This generalization holds more for certain physical and social conditions than for others. For example, where a child is talking in bed at night or in the semidarkness of early morning, nonverbal considerations are minimized (cf. Keenan, 1974, 1975; Keenan and Klein, 1975; Weir, 1962). Where a child is carrying out some activity other than talking, for example, eating, playing, in a daylight setting, nonverbal considerations take on a greater importance. Not only setting but also coparticipants seem to affect the extent to which here and now is communicatively significant for the child. Whereas an adult may lead the child into discussions of past and future events, child-child interaction is rooted in the here and now. The famous exception to this generalization is fantasy (Garvey, 1977; Keenan, 1974). But even with this topic, the immediate setting is very often a point of reference. That is, objects and localities visible to the participants become incorporated into the fantasy event. Where fantasy transforms objects, the decoding of utterances (by the researcher) becomes a tricky matter. Objects are referred to by fantasy-relevant terms or by proterms. In many cases, it is impossible to know exactly what the child is talking about without taking into consideration eye gaze patterns, pointing, touching, and other such behaviors of the child.

To understand the role of eye gaze, gesture, action, and setting in peer interaction, consider the following scene, involving Toby and David Keenan at age 3:5. While earlier months of recording involved the children interacting in their bedroom in near darkness between 6 a.m. and 7 a.m., at this time of the year, the morning light was considerably brighter. The children made greater use of stuffed animals and blankets and played in a number of locations within the room. The piece of recording which we are examining shows Toby and David sitting face to face on Toby's bed. David is sucking his thumb, holding a toy rabbit and security blanket. Toby holds a monkey wrapped inside his security blanket. Prior to the moment at hand, Toby had announced that his blanket was a *steamroller* and David had agreed. Both Toby and David are looking down at Toby's blanket. At this moment, David begins to hum, where upon Toby interrupts, saying *yeah Im gonna make car/*.

In the course of his utterance, Toby performs a series of actions. In the course of *Im gonna make* he moves his blanket and monkey to his right side. (His blanket unfolds in the process.) Between *make* and *car* there is a slight pause (a "beat"), and in this pause, Toby begins pushing his blanket into a ball, completing the process as he utters the word *car*. Following this sequence of actions, Toby says *heres here thats handle/*. In the course of this utterance, yet another series of actions is performed. Immediately following *heres*, Toby picks up a section of the blanket, holding it in the air for one "beat" between *thats* and *handle*. While uttering *handle*, he pushes the section down to the bed. Immediately he says *and thats people*, picking up another section of the blanket in the space of a beat between *thats* and *people*. Following the uttering of *people*, Toby drops that section of the blanket. Actions and utterances of similar character follow.

This description indicates the amount of nonverbal data that needs to be recorded to assess the nature of reference and other speech acts carried out by the child. For example, without indicating accompanying nonverbal behavior, we would not know if *steamroller* and *car* named the same referent, and we would not know the referents for the deictic terms *heres*, *here*, and *thats*. The detailed recording of accompanying movements and eye gaze is, then, not superfluous to an analysis of communicative competence.

This description as well indicates the difficulties of integrating verbal and nonverbal behavior. It indicates the amount of nonverbal data that needs to be reported for a small number of utterances. (In the preceding description, four utterances are examined.) While the situation is reported in "prose style" (cf. earlier discussion of formats), it indicates the difficulties in following exactly what is happening across both nonverbal and verbal modalities when both are reported in the same descriptive space.

The situation just examined illustrates yet a further feature of nonverbal and verbal behavior that is not captured in any of the transcripts written for or by developmental psycholinguists. This feature is that of **interoccurrence**. Verbal behavior may occur one or more times in the course of some other action carried out by a participant. Alternatively, nonverbal actions may be carried out one or several times in the course of any one single utterance. While the property of simultaneity per se has been encoded in transcripts (cf. Bloom, 1970, 1973; Bowerman, 1973b, for example), the evolution of nonverbal and verbal behavior as it happens in the space of an utterance is not reported. Indeed the notion of simultaneity marks the nature of these inter-occurrent acts. The way in which simultaneous verbal and nonverbal behavior is displayed in psycholinguistic transcripts (whether on separate lines or to right or left of each other or in prose style) makes it appear as if the two modalities parallel one another temporally. While this may sometimes occur, it is surely the marked or atypical relation. Careful observation shows that typically utterances and actions do not start at the same point in time. An utterance usually precedes or follows the initiation of some nonverbal act. For

example, in the situation reported above, the action of picking up a section of the blanket overlaps but **precedes** the utterance of *here thats handle*. Alternatively, the same action occurs in the **middle** of the subsequent utterance *and thats people*. These two temporal relations would be coded similarly as simultaneous actions in the transcription formats described above.

The initiation points of utterances and actions provide clues concerning the organization of a communicative act. For example, in the utterances treated above, the relation of verbal and nonverbal behavior differs. In the first case (*here thats handle*), verbal behavior makes reference to and predicates something about an object that is already a focus of attention. The verbal act identified an object previously indicated through nonverbal means. In the second case (*and thats people*), reference is expressed initially through verbal means and only subsequently through nonverbal means. Here nonverbal means clarify what object is being referred to by the lexical item *that*. In these two utterances, then, nonverbal and verbal behavior may carry out different types of communicative work. I have provided only two illustrations here, but similar functional differences can be found if eye gaze to a co-present party occurs before, during, or following an utterance (Duncan, 1975; Goodwin, 1975; Schieffelin, 1977; Stern, 1974). In some locations eye contact may function as a summons to attend to the speaker (e.g., prior to or at initiation of utterance); in other locations, it may function as a confirmation check, as a signal that the speaker is relinquishing the floor, as an invitation to assume the floor, and so on.

To be stressed here is not only that nonverbal and verbal behaviors may start at different times, but that nonverbal and verbal behaviors **interoccur**. We get nonverbal behavior occurring between utterances and between words within a single utterance. For example, in the utterance *and thats people*, a section of the blanket is picked up in a pause lasting less than .3 seconds between *that* and *people*.

We find, then, that a variety of temporal relationships can characterize utterances and actions. Nonverbal behaviors may "break up" utterances at different points; that is, verbal and nonverbal behaviors may interoccur. Additionally, we find overlap, that is, cooccurrence, of verbal and nonverbal behavior. Observing these relations is an important step in understanding communicative processes. In so doing, we can see what is entailed in successfully encoding an intention. For example, we can observe the work of getting a referent identified. Furthermore, we can examine the creation of an utterance. We can see that in many cases, the speaker has not decided what the utterance is to express prior to its onset. Rather, it is in the course of the utterance that the intended act and idea emerges. This process is critical in the verbal expression of adults and children alike (cf. Goodwin, 1975).

Clearly the fine detailing of temporal relations between verbal and nonverbal behavior is not feasible where nonverbal context is recorded by hand. However, some of this type of detailing is possible and the transcript to be used as a model should reflect what we need to document.

Ideally, we want our transcript to meet practical as well as theoretical considerations. We want our transcript to express the relation between nonverbal and verbal behavior as accurately as possible: We want it to encode not only prior and subsequent behaviors, but cooccurrent and interoccurrent behaviors as well. We do not want a transcript that discourages the reader from integrating verbal and nonverbal acts. On the other hand, we want a readable transcript, one that displays clearly and systematically utterances and contexts.

One possible solution to these demands is to display verbal and nonverbal data in separate locations but to use **superscripts** to locate where verbal and nonverbal acts occur (Girton, manuscript). In so doing, utterances and nonverbal information would be distinguishable, yet, through superscripting, would be integrated. Where children are young, where the setting is light (daytime), where actions are varied and frequent, nonverbal information should be given prominence. In these situations, nonverbal behavior should be reported to the **left** of a participant's verbal behavior. Both nonverbal and verbal behavior of a participant are placed within that participant's behavior column, as displayed in Figure 3.1.

FIGURE 3.1 *Nonverbal and verbal behavior of the participant are placed within the appropriate column.*

Participant A		Participant B	
Nonverbal	Verbal	Nonverbal	Verbal

Adding superscripts to our transcript, a page might look like Figure 3.2a.

FIGURE 3.2a. Behaviors are numbered by superscripts on the manuscript as they occur.

Participant A		Participant B	
Nonverbal	Verbal	Nonverbal	Verbal
¹ behavior	¹ utterance	² behavior	² utterance
³ behavior	utt ³ erance ⁴	⁴ behavior	⁵ uttera ⁶ nce ⁷
⁵ behavior		⁵ behavior	
⁷ behavior		⁶ behavior	

As this display indicates, behaviors are numbered sequentially as they occur. Behaviors are renumbered for each page of transcription. That is, the first behavior reported on every page is numbered "1" and so on. Furthermore, Figure 3.2a shows that behaviors that occur at the same time by two different participants are marked with the same number. Finally, behaviors of one participant may be marked on another participant's utterance. In these cases, the reader is instructed to examine what the co-present party is doing in the course of a particular speaker's utterance.

Figure 3.2b illustrates the use of superscripting with a rereporting of the situation outlined earlier. Certain symbols will be used to describe nonverbal

FIGURE 3.2b. Numbered actions are explained in the nonverbal column.

David		Toby	
Nonverbal	Verbal	Nonverbal	Verbal
¹ sucks thumb, ↓ Toby's blanket	(1.2) ¹ nm//mm	² moves blanket & monkey towards rt., >	//yeah// ² Im gonna make, (3) car ⁴
		³ blanket, blanket reaches rest loc.	
		⁴ pushes blanket into ball	heres/
		⁵ picks up part of blanket	⁵ here thats? (6)
		⁶ holds part, ↓ part	⁷ handle ≠
		⁷ pushes part down	
		⁸ picks up another part, holds it	and thats, (8)
		⁹ releases part	people ≠ ⁹

actions and frames, as well as matters of timing. These symbols are explained in the following section.

Utterance Source

A final note to this discussion of page layout concerns the practical information to be noted on each page to locate data. Along the top of each page, the following information should be noted: name of subject, date of recording, tape and side number. Along the extreme left of the page should be recorded footage numbers of the tape examined as well as line numbers for the transcription page. This information is displayed in Figure 3.3.

Transcription Symbols for Verbal and Nonverbal Behavior

In this section, we turn to the way in which behavior can be symbolized within a transcript. The motive here is simply to offer a set of conventions for displaying actions and utterances in naturalistic situations. Special consideration is given to matters of timing (gaps, overlaps, "run-on" utterances), and in this discussion, I am largely relying on the transcription practices of conversational analysis (cf. Sacks, Schegloff, and Jefferson, 1974).

Note in the examples of transcription that utterances are not represented phonetically. The orthographic representation of utterances will vary according to the goals of the research undertaken. Scollon's work (1976) indicates that utterances at the single-word stage should be transcribed phonetically. As the child's pronunciation approaches adult norms, use of phonetic representation should be less critical. However, there are situations in which the speech of older participants is best represented phonetically. These include instances of sound play (Keenan, 1974) and instances of unintelligible speech. Furthermore, strictly standard orthography should be avoided. Rather, a modified orthography such as that adopted by Sacks *et al.* (1974) should be employed. A modified orthography captures roughly the way in which a lexical item is pronounced versus the way in which it is written. For example, modified orthography includes such items as *gonna*, *wanna*, *whazat*, *yah see?*, *lemme see it*, and the like.

In representing conventions for the transcription of verbal and nonverbal materials, I will use a more condensed style than that used in the previous discussion. The conventions will be presented in the form of a detailed table (see Tables 3.1 and 3.2, pp. 63–66). In this table, three types of information will be provided. First, the table will present each behavioral property to be represented in the transcript. Second, the convention for representing each of the properties will be displayed, along with an illustration of its use. Third, the table will briefly point out the motivation for marking this property, its significance in an assessment of communicative competence.

FIGURE 3.3. *Reduced model of an actual page of a transcription.*

Name: _____ Date: _____ Tape No.: _____ Side: _____

Time/ Footage:	Line:	Participant A		Participant B		Comments
		Nonverbal	Verbal	Nonverbal	Verbal	
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					

TABLE 3.1
Verbal Transcription

What to Mark	How to Mark	Why
1. Utterance boundary	/ placed at end of utterance example: <i>don't make ears funny/ he cry/ like that/</i>	Utterance = basic unit in assessing and measuring communicative development.
2. No gap (latching)	= placed between utterances with no time gap example: <i>look ≠ look ≠ look ≠ look/</i>	Utterances should have a single intonation contour and single breath group, but there are cases in which more than one intonational contour appears in single breath unit. Each contour may correspond to an informational unit. To mark contours linked in this way (no gap), we use "latch marks" (=).
3. Pause length	(.3) placed before utterance; utterances separated by significant pauses should be placed on separate lines example: <i>and/ lettuce/ man's eating. lettuce/ (5) one day/ was little rabbit/ called Lucy/ (.) indicates very slight pause</i> example: <i>gonna (.) throwit (.) fields/</i>	a. partly defines utterance boundary b. partly define "turn" (turn = utterance bounded by significant pause or by utterance of other participant) c. # of utterances per turn may be measure of control d. may signal end of topic sequence or propositional sequence e. may signal leavetaking of floor, elicit feedback from next speaker f. may signal distress (cognitive, linguistic, disagreement)
4. Overlap	// placed at beginning of overlap,] placed at end of overlapped utterances overlapped utterances go on same line example: A: <i>steamroller's stuck //now/</i> B: <i>// oh dear] dear /</i>	a. like pause length, indicates sensitivity to turn and utterance units; may show child or caretaker sensitivity to informational units b. frequency and placement of overlap may be variable in caretaker speech c. may be important in assessing cultural differences in language socialization

TABLE 3.1 (continued)

What to Mark	How to Mark	Why
5. Self-interruption	- placed at point of interruption example: <i>want some- all of it/</i>	a. may reflect trouble spots in interaction (see 3); trouble can be cognitive, sociological, etc., e.g., can't get reference established, can't get attention of addressee b. extent to which speaker can reformulate utterance indicates ability to (1) self-correct, (2) paraphrase
6. Intonation, prosodic quality	, marks low rise ? marks high rise . marks low fall (only use in adult speech) ! marks exclamatory utterance place , ? . ! at end of utterance capital letters mark increased volume: example: <i>YOU SILLY/</i> _____ marks stress example: <i>I want <u>that</u> one/.</i> ::: marks lengthened syllable (each : = one "beat") example: <i>hello::/</i> (()) marks other voice qualities, e.g., ((LF)) laugh ((WH)) whisper ((CR)) cry ((WM)) whimper ((WN)) whine ((GR)) grunt (cf. Bloom <i>et al.</i> unpublished manuscript 1974)	a. may mark new information b. may mark hearer selection (e.g., self or other, human versus toy, etc.) c. may mark communicative act d. may mark utterance boundary e. ::: may be tied to marking of aspect
7. Audible breathing	-h marks in-breath h marks out-breath (h) marks laughter	a. may indicate utterance boundary b. hesitation marker

TABLE 3.1 (continued)

What to Mark	How to Mark	Why
8. Metatranscription marks	() unclear reading, no hearing achieved (cow) tentative reading X/ repetition of prior utterance, e.g., <i>no/X/X/</i>	

TABLE 3.2
Nonverbal Transcription

What to Mark	How to Mark	Why
1. Changes in gross motor activity	Bloom <i>et al.</i> (unpublished manuscript 1974) suggest using present progressive tense to describe action simultaneous with utterance. Use simple present tense to describe action prior or subsequent to utterance. Put action prior to utterance on line above, simultaneous action on same line, and subsequent action on line below utterance (in nonverbal column). If using videotape, mark precise overlap of action and utterance with a superscripted # above point in utterance (Girton, manuscript)	a. aids in determining reference and predication b. aids in interpretation of communicative act (self-description, refusal, etc.) c. aids in interpretation of interactional sequence (nonverbal means of accomplishing 1st or 2nd part of a sequential pair, cf. Sacks <i>et al.</i> , 1974) d. provides information linking utterance to change of state or change of object (cf. Greenfield and Smith, 1976) e. indicates child's understanding of or ability to express tense or aspect
	example: <i>want¹cow/ ¹grabs cow</i> If superscripts are used, use only present tense to describe action, as simultaneity is otherwise marked.	

TABLE 3.2 (continued)

What to Mark	How to Mark	Why
2. Eye gaze	↑ looks up (+ target: + name) ↓ looks down (+ target: + name) (Schieffelin, manuscript 1977) example: ↑ M (use initial for person) ↓ car > towards right < towards left ▽ facing camera △ back of head to camera (Reilly, Zukow, and Greenfield, manuscript) example: > ↓ M (looks down toward right of monitor screen at mother)	a. indicates intended addressee, referent b. indicates extent to which child attending c. indicates extent to which speech is planned
3. Gestures	PT pointing R reaching HD holding up TG tugging OF offer (Bloom <i>et al.</i> , unpublished manuscript 1974)	a. primary means of reference b. indicates communicative act (e.g., summons, offer, description)
4. Body orientation	◡ marks direction of pelvis (bird's eye view) (Reilly, Zukow, and Greenfield, manuscript) example: Λ (A and B are facing each other; A's body is facing camera, B's back is to camera.) ∩ U B	a. provides social "frame" for talk and action b. indicates extent to which participants engaged in focused interaction

Transcription Conventions and Theoretical Issues

Before bringing this chapter to a close, I would like to state more fully the theoretical motivation behind some of the transcription conventions illustrated. As many of the conventions relate to matters of timing, this discussion will focus primarily on the theoretical relevance of these features.

What, then, could motivate our marking of pause length, overlap, absence of gap, and self-interruption? Let us consider two areas of concern to developmental psycholinguistics to which matters of timing are relevant.

Verbal Units beyond the Utterance

One of the continuing issues in child-language research has been the status of an utterance with respect to propositional units. For example, there has been a controversy around the status of single word utterances as "holophrases" (De Laguna, 1927), that is, as sentences. The general consensus (e.g., Bloom, 1973; Greenfield and Smith, 1976; Scollon, 1976) is that utterances are not the syntactic entities that sentences are. Further, recent research (Scollon, 1976; Bloom, 1973; Ochs, Schieffelin, and Platt, Chapter 11 of this book; Atkinson, Chapter 10) indicates that an utterance of a child may not always correspond to a single propositional act. A child may take two or more utterances to encode a single proposition. It is clear from this literature that in assessing just how ideas are expressed over developmental time, we have to consider units beyond the level of the utterance. As yet, no studies have been carried out relating propositional sequences to timing. However, features such as relative pause length (along with intonation, eye gaze, etc.) could be valuable in determining the boundaries of these sequences. For example, consider the following sequence:

(Previous context, David and Toby [3:5] are sitting on one bed, facing one another (Toby facing camera, David with back of head to camera). Toby and David are currently entertaining a fantasy about driving cars.)

David		Toby	
Nonverbal	Verbal	Nonverbal	Verbal
13 < door	(1.0) you're: gonna go/gonna go way up (.) uh (.) far away (13.) you will be in Grantchester (.) you see! (1.0) (bænkə)*		
* "blanket"			

Without wishing to impose too rich (or too impoverished) an interpretation, we might paraphrase the above sequence as *you're going to go way up far away in Grantchester, you see?* The proposition is not conveyed in one smooth expression however. In one case, there is an intonational contour that warrants an utterance boundary (following *go*). In three other cases, there is no terminal intonation contour but a very brief pause (lasting less than .3 second). The entire sequence, however, is bounded by much longer pauses, lasting 1 second each.

In addition to relative pause length, the marking of overlap should be helpful in assessing propositional units. For example, one factor leading to the use of several utterances may be that another participant has interrupted the speaker's expression. Consider, in this light, the following sequence:

(David and Toby, continuing their fantasy about driving, are now pretending to ride on a steam-roller. David and Toby are sitting on one bed, facing one another. Toby holds a monkey puppet, David a stuffed rabbit.)

David		Toby	
Nonverbal	Verbal	Nonverbal	Verbal
7 moves rabbit to rt.	(13.2) <i>nm!</i> ((high)) <i>OH!</i> <i>we got to (.4)</i> <i>we have to get</i> (/staps)*/ = <i>yeah</i>	7 holds monkey still then moves it down, rt. to bed, ↑ D	(1.6) ((very high)) <i>should we?</i> = <i>should we could we go(.)</i> (/səvəl/)***? (1.2)
* "shops" (?) ** "store" (?)			

While both participants display sequential expression of proposition, the sequence of particular interest here is that produced by Toby following the (1.6) second pause. The sequence could be glossed as roughly "Should we (or could we) go to (the) store?" The history of this sequence is a bit complicated to explicate. Roughly, Toby appears to be recouping David's prior utterance in question form, apparently eliciting a confirmation of the suggestion at hand (i.e., to go to the shop) from David. David appears to interpret Toby's utterance in this light and responds affirmatively at the first appropriate point (i.e., at that point, Toby's utterance could count as a confirmation check). However,

certain cues indicate that Toby did not intend to end his utterance there. Following David's response, Toby "recycles" (Schegloff, 1973) his utterance, fully expressing the proposition in question. What are these cues? It could be argued for example that Toby did not have the intention of expressing the full utterance initially and only subsequently repeated the interrogative in full. Two things argue against this. First, there is no gap between the first and second utterances of Toby. David's utterance *yeah!* is expressed immediately following Toby's utterance *should we?*, and Toby's second utterance following immediately after David's. Both of these transitions are marked on the transcript through the use of latch marks (=). The smooth transition suggests that David's utterance interrupted Toby's expression. Normally, there is a slight pause between utterances, particularly where speaker change is involved. A second cue consists of the fact that Toby repeats his utterance in the beginning of his second turn. Analyses of adult speech behavior in middle class Anglo society (Schegloff, 1973) indicates that repetitions of this sort are found most frequently in turn-initial position. Further, they are found where there is competition for the floor and where the current speaker has been previously denied the floor or where there is overlap between different speaker's utterances. The repetition counts as a recycling of the original attempt to gain the floor and provide talk. The situation under consideration looks very much like that described for adult conversational behavior. Based on this literature, an argument could be made that Toby's second utterance constitutes a second try, a recycling of an earlier expression.

In addition to the relevance of timing conventions to the evaluation of propositional units, these conventions are also of use in marking conversational units. By conversational units, I am referring to those units relevant to the organization of speaker-hearer interaction. In particular, I am addressing the issue of what constitutes a "turn" at talk. As so much of pragmatics is concerned with conversational sequencing, it is crucial to use the concept of a turn at talk (or turn at behaving or acting). Many types of sequences, for example, adjacency pairs (Schegloff and Sacks, 1973), are based on turn units. For the analysis of such sequences as well as other areas of concern, our transcript ought to display turn units in a systematic manner. It is to this end that conventions of timing are significant. In the work on adult conversational behavior in middle class Anglo society, turns are considered to be verbal units bounded either by the talk of another speaker or by a significant pause (Sacks, Schegloff, and Jefferson, 1974). What will count as a significant pause may vary situationally, but typically anything over .3 seconds counts as significant. An important issue that we must address in child language is whether this definition should hold in children's conversations. The basic elements of this definition seem worth keeping and should be used as a point of departure in the construction of a child-language transcript. The reader of our transcripts should read speaker change as marking a change in turns. Furthermore, relatively lengthy pauses should be interpreted as turn boundary markers. The exact length of

a significant pause needs to be determined for each set of participants. We would not expect it to match that of adult-adult conversation. Indeed the difference in what counts as a significant pause may be a variable in distinguishing children's from adults' conversations. Notice that in Table 3.1 it is suggested that utterances preceded by significant pauses should be placed on a separate line (below) from that of preceding utterances. A line that begins with a significant pause would be interpreted by the reader as a new turn beginning. Other turn beginnings would be marked by speaker change.

Grammatical Competence of the Child

The greatest concern within developmental psycholinguistics has been the linguistic knowledge of the language-acquiring child. That is, to what extent do children use a language's syntactic and semantic structure in comprehension and production of speech? The issues raised here are extensive and complex. However, one important concern has been with the relation between comprehension and production itself. For example, there is a literature that considers whether comprehension of language anticipates, matches, or lags behind linguistic production (cf. Bloom *et al.*, 1974; Fraser *et al.*, 1963, for example). One of the constant cries in this literature (and generally in the field) is that comprehension is difficult to assess. By and large, comprehension is assessed through the use of directive sentences with children (cf. Smith, 1970, for example) and in relatively structured or experimental situations.

It is suggested here that much more information about children's understanding of language can be gleaned from a transcript that encodes timing phenomena than from one which lacks these conventions. In particular, the marking of interruption can offer useful information concerning the sensitivity of children to grammatical units. How is interruption relevant to this concern? Once again, if we turn to the observations carried out on adult-adult conversation, we can find useful insights. This literature (Sacks, Schegloff, and Jefferson, 1974) indicates that by and large adult speakers do not interrupt one another. Overwhelmingly, speaker change occurs at terminal boundaries of a construction type (e.g., end of clause). That is, speaker change occurs at the end of an idea expressed by one participant. When overlap does occur, it is not random. Rather, it tends to occur just before a construction is about to be completed. The hearer appears to project the possible ending point of an utterance and seeks the floor as that point approaches. This observation is reviewed here, because it evidences that speakers are sensitive to such construction types as clauses and sentences. This is apparent even when overlap does occur. In the transcript of adult speech behavior, we have strong empirical support for the "reality" of syntax among native speakers.

Why not look for the same empirical support in the transcripts of children's speech behavior? We may unearth a wealth of data evidencing children's

sensitivity to grammatical constructions in a particular language. (Our suggestions are confined to Anglo middle-class society. We would have to examine the conversational habits of each social group to validate such an exercise in other social contexts.) Such research would require examining transcripts for occurrences of overlap. The extent to which overlap occurred near clause boundaries could indicate the child's awareness of these units. Of course, here the researcher would have to consider the role of nonverbal behavior as signals of turn completion. The child could be attending to nonverbal cues of the adult in anticipating a potential turn transition point. In similar light, intonational cues would have to be considered by the researcher. However, no such enterprise at all can be undertaken if a transcript does not encode precise points of overlap.

While the child's utterances themselves have traditionally been treated as sources of linguistic knowledge, the temporal evolution of a single utterance has not been considered as relevant to this concern. Pauses and hesitations in the course of an utterance are rich resources for an analysis of developing linguistic competence. Hesitation phenomena may reveal trouble sources for the child. The trouble may be related to the complexity of the idea to be conveyed, to the complexity of the structure of the expression itself, or to situational difficulties (e.g., accommodations to listener's knowledge).

Under certain conditions, the transcript may display not only trouble sources for the child, but the child's awareness of the trouble and the child's attempts to "repair" (Schegloff, Jefferson, and Sacks, 1977) the trouble as well. That is, in certain cases, the gap within an utterance may precede a reformulation by the child. For example, in the last example, David says *we got to*, then pauses for .4 second, then says, *we have to get (staps)*. The utterance following the pause appears to be a reformulation of the preceding expression. Such reformulations can provide rich data for an analysis of linguistic knowledge in child language. This has been pointed out for phonological aspects of language by Scollon (1976). In the above example, the reformulation indicates that the child is able to modify his utterance in the direction of greater syntactic acceptability (*got to* is reformulated as *have to*). Similarly, this example and others reveal that the child sees certain lexical items as sharing similar semantic properties. (See also the Table 3.1 example *want some—all of it*.)

Gaps within utterances also provide some evidence that the child may be to some extent aware of "missing" constituents. That is, in certain cases, a "beat" is maintained in an utterance where a constituent would be placed in adult speech. In the last example, Toby leaves a "beat" between the verb *go* and the lexical item (*səvəl*). In adult speech, the gap would be filled with a preposition (*to*) and a determiner (e.g., *the*). The fact that such a gap is left lends support to the idea that a child's linguistic knowledge is richer than the surface structure of his utterances suggest. (This example represents one of a series of utterances that display this feature.)

Do Our Data Have a Future

The discussion of transcription and theory presented here is to be taken as a first venture into a vast wilderness of research concerns. Many issues have not been addressed. Furthermore, certain transcription conventions invite modification by others with expertise in the field. It was the purpose of this chapter to:

1. Identify what constitute data for the developmental psycholinguist.
2. Expose theoretical and cultural underpinnings of the transcription process.
3. Provide a set of basic transcription conventions sensitive to psychological, linguistic, and cultural dimensions of young children's behavior.
4. Indicate the relevance and usefulness of these conventions to current theoretical concerns.

A greater awareness of transcription form can move the field in productive directions. Not only will we be able to read much more off our own transcripts, we will be better equipped to read the transcriptions of others. This, in turn, should better equip us to evaluate particular interpretations of data (i.e., transcribed behavior).

Our data may have a future if we give them the attention they deserve.