

## 1 UNITS OF SPEECH

Child language researchers have generally approached the description of first-language acquisition using the traditional apparatus of adult language description. They have, for instance, focused on the emergence of adult words, on the development of adult morphological processes, on the classification of "one-word utterances" as opposed to "two-word constructions," and on the emergence of adultlike syntactic structures.<sup>1</sup> On the other hand, they have specifically ignored the vast quantity of early utterances (the entire early output of some children at some stages) in which such units and constructions cannot be readily distinguished (see discussion in Scollon 1976, 24-36). They have also failed to study the processes leading up to the emergence of recognizable words.

It is, however, in the very residue of heretofore ignored utterances that we find clues to these processes. This book presents a new view of these processes, marshaling the evidence for their existence, showing how variability among children's early speech productions can be easily understood in relation to these processes, and pointing to further research possibilities growing out of this view.

I will first need to sketch three distinct orientations to the seemingly intuitive notion of "minimal unit of speech." The first concerns the unit of speech production used by the adult speaker. The second concerns the first-language learner's perception of appropriate units in an unknown language and her or his attempts to produce them. The third concerns the child language investigator's efforts to identify and describe the units that the child has perceived and uses. Inadequate awareness of these distinct orientations, coupled with the linguist's overriding concern with economy of description, has obscured what the data of early language acquisition are trying to tell us.

### 1.1. Units From The Adult's Point Of View

Relatively little linguistic research has been done to identify the actual units from which mature speakers construct utterances. The focus has rather been on describing only the corpus of utterances themselves (the "language") in the most economical and nonredundant terms, regardless of how they were produced. Descriptions of adult, and in fact also child, language therefore strive to minimize both the number and size of the basic distinctive units used. Thus one looks for distinctive features in phonology, and morphemes in syntax, rather than functional units as measured, for instance, by occurrence of invariant combinations, fluency of production, or characteristic intonation contours (see 1.3 for further discussion).

If this model of language is taken also as an accurate model of the adult speaker, it implies that the speaker stores the lexicon and grammar in the most nonredundant form and produces each utterance afresh from the minimal units. Evidence has been accumulating, however, that normal adult speakers actually store and call into play entire phrases that may be many words long - phrases that are not constructed from their ultimate grammatical constituents each time they are used. Accordingly, while words and morphemes may be the ultimate units in a logical and economical description of a *language*, the actual units used in *speech production* may be different (see, e.g., Bisazza 1978; Bolinger 1975; Hayes-Roth 1977; Pawley & Syder 1976; Wong Fillmore 1976). I will now examine the nature of these larger units.

In what follows I will use the term "speech formula" to mean a multi-morphemic phrase or sentence that, either through social negotiation or through individual evolution, has become available to a speaker as a single prefabricated item in her or his lexicon. Not only are such formulas fixed in structure; they also tend to be rather strongly situationally conditioned. They range from memorized sequences (such as counting, the alphabet, nursery rhymes), through swear phrases (*goddammit*), exclamations (*oh boy*), greeting and

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<sup>1</sup> A few examples of such studies, representative of the work on early stages of language acquisition, are, for vocabulary development, Leopold (1939), Nelson (1973); for morphological development, Berko (1958), Brown (1973); for single- vs. multiword utterances, Bloom (1973), Scollon (1976); for syntactic development Bloom (1970), Brown, Cazden, & Bellugi (1969).

leave-taking rituals (*how are you, see you*), social control phrases (*lookit, my turn, shut up*), to idioms (*kick the bucket*) and small talk (*isn't it a lovely day*) (see Wong Fillmore 1976 for a more complete discussion, and also Ferguson 1976 on politeness formulas and Fraser 1970 on idioms).

In fact, the range of formulaic speech is probably even greater than this, extending into the realms of jargon, technical language, and intimate speech: all those areas in which expressions can be negotiated among a small number of parties until they achieve very specific meanings known only to the parties involved. Nagy demonstrates the existence in English of certain phrases that, although grammatically analyzable and therefore not idiomatic, are nonetheless restricted in their combinatorial privileges to the extent that they and their components must be separately specified in the lexicon. He describes these phrases as "semi-productive" and sees them as constituting "a significant area where sentences are constructed out of prefabricated chunks rather than being built from scratch on the spot" (1978, 289). Pawley and Syder (1976) take an extreme position on the extent of formulaic speech available to the speaker, claiming that in order to achieve "native-like fluency" in ordinary conversation the speaker must make extensive, if not almost exclusive, use of what they call "institutionalized clauses." In general such clauses are not idioms, in that they are analyzable by ("transparent" to) the grammar of the language (as idioms are not), but for efficiency of processing they are nevertheless stored whole and not generated from scratch each time they are needed.

We may further need to recognize the continuum between "cultural formulas," which, judging from their invariance in form, are treated as units in a particular speech community (whether of two or a million persons), and "idiosyncratic formulas," which may have a prefabricated status only for one particular speaker (for further discussion see 4.2.1). Thus, if I find an especially felicitous way of expressing an idea, I may store up that turn of phrase so that the next time I need it it will come forth as a prefabricated chunk, even though to my hearer it may not be distinguishable from newly generated speech. This last kind of expression, then, not only is completely analyzable by the grammar of the language but as a result of its transparency has a dual status for the speaker: It can be handled either as a single unit or as a complex construction with internal structure (e.g., words can be inserted into or deleted from the phrase, or the grammatical structure can be changed as needed). Bateson suggests the useful term "praxon" for chunks of speech or other behavior that, "regardless of internal structure, are either used or interpreted as unitary" (1975, 61).

For mature speakers of a language, then, formulaic speech may serve as a shortcutting device: It saves processing time and effort, allowing the speaker to focus attention elsewhere, for instance, on the social (as opposed to the linguistic) aspects of an interaction, or, as Pawley and Syder suggest, on the macrostructure of a discourse rather than on the generation of individual sentences. The idea that speakers indeed make use of such shortcutting devices as knowledge becomes consolidated is consistent with the "knowledge assembly theory" proposed by Hayes-Roth, who postulates a process of "unitization" that creates an "assembly" of smaller units of knowledge ("cogits"). Such a unitized assembly is then always "activated in an all-or-none fashion" (1977, 261). Bisazza goes so far as to propose that each adult speaker of a language has constructed a whole continuum of grammars, each of which "is capable of serving as a template for linguistic behavior" (Claim 2); that this continuum "can be characterized on the basis of principles of relatively more or less differentiation and abstract analysis and systematization" (Claim 3); and that "the adult's choice of TL [Templating Level] for a particular instance of performance is determined by a kind of least effort principle: the [simplest] TL capable of correctly templating the encoding or decoding behavior in a given context is usually chosen" (Claim 6) (1978, 78-9). Such a suggestion implies that, far from employing a minimal amount of storage space for our language, we keep on hand many representations of the "same" information, choosing in any given instance exactly that one which minimizes processing effort.

Another important aspect of some speech formulas is that they may not be entirely fixed, but may be only partly set, having one or more open "slots" that can be filled in with

grammatically appropriate words according to the speaker's needs, for example, *how are you* + time phrase (*today, this morning*, etc.). I will call such constructions "formulaic frames with analyzed slots," after Wong Fillmore (1979). Krashen and Scarcella use the term "prefabricated patterns" to refer to constructions that are "partly 'creative' and partly memorized wholes," and the term "prefabricated routines" for "memorized whole utterances or phrases," that is, what I call "speech formulas" (1978, 283).

A last point that I wish to clarify about formulaic speech is its relationship to what has been called "automatic speech." The latter term has been used to refer to the speech of brain-damaged patients who, although they have little or no productive control of propositional (creative) speech, are nevertheless able to utter certain stereotypical words or phrases (see van Lancker 1975, 110-47, for a full discussion). Although such utterances share with formulaic speech the property of being fixed in form, they differ in that for any given patient the available repertory of such utterances is extremely limited and there is no creative aspect to them at all. It is an intriguing question how these utterances can remain available to patients when propositional speech is destroyed - perhaps through strong emotional associations or some sort of overlearning. Furthermore, as Huebner (1982, 40) points out, the automatic speech of aphasics tends to be used without regard to appropriateness, whereas language learners always attempt to use their formulaic speech in socially and linguistically appropriate ways. Suffice it to say that "formulaic speech" is not here to be taken as synonymous with "automatic speech"; rather, the latter is seen as at most a very limited subset of the former. This point is relevant because Krashen and Scarcella use the terms "automatic speech" and "routines" (which I here call "formulas") as if they were synonymous (1978, 286-9), placing both in opposition to creative speech. I propose in this book, however, that formulaic speech, but not automatic speech, is merely a facet of creative language.

## 1.2. Units From The Child's Point Of View

The recognition of the ubiquity of formulas in speech production is central to our inquiry into child language acquisition in several ways. First, it focuses our attention on the nature of the raw data with which the child has to work. It is not a dictionary of morphemes that the child is exposed to, but rather an intermittent stream of speech sounds containing chunks, often longer than a single word, that recur with varying frequency. It is out of this stream of unknown meaning and structure that the child must attempt to capture some pieces in order to determine their meaning and to preserve them for future use.

To some extent the child's problem is not unlike that of a cryptographer who, faced with an undeciphered text that has no markings for word or sentence breaks, must determine where meaningful divisions occur (Barber 1974, 14). The child's problem is more difficult in that it must be solved in real time: There is no possibility of going back and rereading the text. When considered in this cryptographic light it is not surprising that missegmentation errors should occur; what is surprising is that so little should have been written about this process, and that it has not become a focus of systematic investigation. Tangential treatments can be found in Brown (1973), Clark (1974, 1977), MacWhinney (1974), and Wong Fillmore (1976).

Secondly, awareness of formulas alerts us to the possibility that when we hear a child produce an utterance containing several words of the adult language, it may consist of only one "unit" for the child, just as the adult utterance(s) after which it was modeled may have been produced as single formulas.

It has in fact been noted in the literature that the speech of certain children often contains formulaic phrases that the child could not have constructed from their constituents. For instance, in commenting on Bloom's observations of children's ability to remember and reproduce complex linguistic material, Olson says, "Such utterances manifest structures that are nonproductive in the child's language at that particular stage, but the utterances are used as a unit for some specific semantic or pragmatic purpose without the child's knowing in some sense the internal structure of the string" (1973, 156). I propose in this book that this phenomenon is a manifestation of one of the central processes in all early language acquisition. This process is the extraction of pieces, or

"units," from the speech stream in which the child is immersed. Since the child does not know the language, it is unreasonable to assume that the first units she or he extracts will coincide exactly with the words and morphemes of the system. On the other hand, it is reasonable to assume that at the earliest stages there is a cognitive limitation constraining the child to processing (e.g., extracting and producing) what to the child is one unit at a time. For production, at least, it has been implicitly assumed that this limitation exists. Certainly the existence of a "one-word stage" of language acquisition is accepted without question by researchers in the field (see, e.g., the summaries in Clark & Clark 1977, 300-304; Dale 1976, 8-17; deVilliers & deVilliers 1978, 48-52). This stage would, however, have been more accurately labeled the "one-unit stage."<sup>2</sup>

Finally, recognizing that children may be extracting phrases as well as words as their first units can explain the wide range of variation in the size of these units, measured in conventional words or morphemes (or even syllables).<sup>3</sup> Thus one child's early vocabulary may consist primarily of one-word labels (e.g., Halliday's Nigel [1975, 148-54]; Scollon's Brenda [1976, 47]; Nelson's Jane, Paul, Leslie, and Ellen [1973, 104, 106, 109, 110]), whereas another's may contain a higher proportion of multimorphemic expressions (e.g., Nelson's Lisa [107], Mark [111], Robert [112]; Peters's Minh [1977, 563-7]). I shall return to this variability in the next chapter.

### 1.3. Units From The Linguist's Point Of View

A linguist typically has motives for recognizing units different from those a child or adult speaker has. The linguists' bias of looking for words and morphemes has probably contributed to their overlooking the fact that the earliest units the child uses are not simply words but units of another kind. Some of these units happen to coincide with words of the adult language, a matter that leads the linguist, trained in a descriptive framework that takes these as minimal units of grammar, to concentrate on these utterances and to ignore the others. Even if a linguist should notice, or wonder about, these residual utterances, however, it is still difficult to accord them serious attention because of two types of factors, one practical and the other more theoretical.

#### 1.3.1. Identifying the units

Practical factors affecting the linguist's attention to the units the child produces involve the difficulty of inferring the units' actual status - unitary or complex - in the child's system: One must use what the child *produces* to infer what the child currently *perceives* the language system to be. One reason for this problem is that, at the one-unit stage, the child is typically having difficulty controlling the phonology, and the early utterances are so garbled or reduced that it is extremely difficult for the linguist to determine their targets. They in fact do not appear to be suitable material for (traditional) linguistic analysis at all. If it were easier to recognize the multimorphemic nature of some targets we might have had our noses rubbed in the problem; as it is, we have been content with relegating such

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<sup>2</sup> I have been unable to find a completely satisfactory term to use for these early productions that, although unitary for the child, are not necessarily so from the standpoint of linguistic analysis. Thus "holophrase," which on the face of it could easily mean "a single unit in the child's linguistic system made up of one or more morphemes of the adult language," is commonly used to mean "a single word used as if it meant a whole sentence." I feel I must also reject Bateson's term "praxon," which is broader in scope and includes units of behavior as well as of language. MacWhinney's term "amalgam," which refers to morphemic combinations (such as *ships*) "formed" by rote memorization (1974, 76), has the right meaning, but seems to have the wrong focus: Rather than pointing up the unitary nature of these early units, it reflects the adult linguist's bias that they really consist of more than one morpheme. I have therefore settled on the less colorful term "unit," which at least implies no more than what is intended.

<sup>3</sup> Notice that the evidence has not shown that at the one-unit stage these units are limited to one *syllable* each. Such a constraint would, of course, limit a child to single words or parts of words. But a quick scan of early vocabulary lists will show many entries such as *mommy, daddy, doggie, kitty, allgone, goodnight*. If a child can process a two-syllable word, she or he should process a two-syllable phrase in the same way - and, in fact, how is the child to distinguish the two, at least at the earliest stages of acquiring the language system?

utterances to the "unintelligible utterance" trash heap. Also, the child's lack of phonological control has as a consequence the fact that there is a wide phonetic variation in the pronunciation of the "same" target from one time to the next (see, e.g., Scollon 1976, 44-5). And when a child is using a "Gestalt" production strategy (see 2.2.1; Peters 1977; Macken 1979), the linguist's difficulty in determining whether or not two utterances are aiming at the same longish target is compounded. (In the case of older children learning a second language, however, phonological control will have developed to the place where, although there may be an accent, the problem of determining initial targets will be much easier; see, e.g., Wong Fillmore 1976).

In the face of these difficulties, how is the linguist to determine what for a particular child is a single unit rather than a multiunit construction synthesized by the child? Nelson raises this question (1973, 24-5) but concludes that the problem is intractable and decides to retain the adult definition of a word as her unit of analysis. Similarly, although Brown says, "It seems likely to me that in Stage I there are a great many unanalyzed 'chunks' as well as much that is produced by grammatical rules," he does not really pursue the problem further, noting only that "spontaneous speech alone does not enable us to decide in every case which is which" (1973, 212). At the end of his book he does take some space to deal with "the problem of segmentation" (390-8). In considering whether Adam's "it's" and "that-a" are "single morphemes" (i.e., units) for the child, he uses the following criteria: (1) Were the parts ever produced separately? (2) Was the usage of the form overgeneralized in "inappropriate" ways (e.g., "It's fell")? (3) Did overgeneralization *fail* to occur in certain contexts (e.g., "I want that-a book")? (4) In the speech of the child's parents were the models "usually *not* marked by any manifestation of open junction"? (5) Were they high in frequency in parental speech? I believe that these criteria deserve more attention than Brown himself gave them. They are incorporated in the general set of criteria that I develop shortly.

As long as the child seems to be in the one-unit stage, that is, as long as there seems to be an upper bound of one item (however long in adult syllables or morphemes) on her or his production capacity, we feel on relatively safe ground (e.g., Minh at 14 months producing *uh-oh*, *look at that*, *oopsidaisy*, *what's that?* *open the door* [Peters 1977, 563-65]). We must, of course, be ready to tell when the child is starting to construct utterances of more than one unit. What methods can we use to distinguish one-unit from multiunit utterances? Although it may not be possible to make such a decision for every utterance, the following criteria can give us some clues.

### **1. Is the utterance an idiosyncratic chunk that the child uses repeatedly and in exactly the same form?**

The use of this criterion is illustrated in Clark's description of the speech of her son, Adam:

The fact that copied utterances were retained intact for several weeks without other lexical items being substituted suggests that such utterances also functioned as units with limited internal structure . . . Here is an example:

- (9) *Wait for it to cool.* (Said whenever a hot meal was brought on to the table.)  
 Only after several weeks was another adjective substituted for *cool* in the structure yielding:  
 (10) *Wait for it to dry.* (Hanging up on a towel rail a nappy that he'd dropped in the bath.)

[1974, 4]

Similarly, Burling, in his report of his diary study of his son Stephen's acquisition of Garo and English between 1;4 and 2;10, finds the criterion of nonsubstitutability a useful one in determining whether Stephen's productions were unitary or not:

At one year and seven months, I began to notice a few utterances which, from an adult point of view consisted of more than one morpheme. At 1:10 . . . I . . . recorded different inflectional forms of the Garo first person singular pronoun . . . though presumably he learned these individually and did not construct them himself. His closest approach to substitutability was in phrases with the word *ba-o* 'where' as in *po bao* 'where's Paul?'. I heard this word used once or twice with nouns other than 'Paul,' but was still doubtful that these phrases were formed by him. It seemed more likely that all were learned as entire phrases. His speech

could thus not be described as having utterances of more than one morpheme, since the constituents were not substitutable. [1973, 80]

## 2. Is the construction of the utterance unrelated to any productive pattern in the child's current speech?

This criterion, too, is used by Clark. She asserts that Adam's expression *I could easily do that* at 3;11.2 "was clearly copied as a complete routine from other children at the nursery in competitive situations," and that this was the only expression for a long time in which he ever used *could* (1977, 350).

This criterion is also seen in Bloom: Her lists of Kathryn's and Eric's utterances for which her grammars could not account include "structures that were not productive in that they occurred only once and appeared to be unanalyzed 'stereotype' sentences" (1970,75).

Wong Fillmore also seems to use this criterion in her study of five 5- to 7-year-old second-language learners learning English in a school setting:

In Nora's spontaneous speech samples at Time 1, for example, one finds sentences such as "I don't wanna play wi' dese one" and "I don't know" among others such as "Dese one no want play," "You no do dese" and "She's not give it the money him" . . . In Nora's case, the well-formed negatives were acquired and used as ready-made wholes, while the others apparently were the result of her own efforts at negation. [1976, 287]

Similarly, MacWhinney notes that "the morphophonological structure of rote forms is often far in advance of the morphophonological structure of productive forms" (1978, 11).

## 3. Is the utterance somewhat inappropriate in some of the contexts in which it is used?

Clark uses this clue to determine that certain of Adam's utterances were not completely analyzed:

There were certain utterances which Adam produced which were quite clearly copied as incompletely analysed units, and given only a global interpretation with reference to the situation. For example,

(7) *Sit my knee.* (Used when the child wanted to sit on an adult's knee, and probably copied from an adult saying "Sit on my knee.")

(8) *I carry you.* (Said when the child wanted to be carried and definitely copied in the first instance from his father, who said "I'll carry you .")

The child's strategy here seemed to be to copy the utterance produced by the adult and use it himself in similar situations, without making any modifications for the new speaker.

In the above examples the fact that the child had not fully accommodated to the syntax of the utterances he had copied was evident from the way he misapplied them. [1974, 3-4]

Similarly van der Geest gives some examples where his son, Mark, who was learning Dutch, evidently copied whole expressions without adjusting the pronouns:

Around age 2;2 he could be expected to say such things as

(11) *Jij doet dat* (You do that); meaning: "I do that."

(12) *Is dat van jou?* (Is that yours); meaning: "Is that mine? "

[1977, 98]

## 4. Does the utterance cohere phonologically?

That is, is it always produced fluently as a unit with an unbroken intonation contour and no hesitations for encoding? Note that whereas for adults hesitation pauses are not reliable indicators of the size and nature of encoding units (Rosenberg 1977), the dual criteria of presence versus absence of hesitation and double versus single intonation contour have been fairly widely used in child language research to distinguish a succession of two one-word utterances from a single two-word construction. Thus Scollon uses these criteria to separate "vertical" from "horizontal" constructions (1976, 152-3). Branigan and Stokes, too, on the basis of their phonetic analysis of the prosodic integration of early utterances, propose two classes of utterances: those that are temporally fragmented (with pauses) and those that are temporally unified (1981, 8). It would seem, therefore, that at least for very young children the absence of pauses together with the presence of smooth

intonation contours is a good clue to some kind of preplanned psycholinguistic unit. And a particular sequence of adult morphemes that is always marked by such phonological coherence (i.e., one in which there are never any hesitations in the middle) is a good candidate for a unit in the child's system.

Certain early utterances may even have special intonation contours associated with them. Minh as early as 1;2 had easily recognizable "tunes" for the expressions *what's that?* *look at that!* and *uh-oh!* (Peters 1977). These utterances were also marked by phonological integration: They were articulated as units, the most common forms being ['ʌsæ:], [dʊkə'dæ:], and ['ʊ'ʊ].

Wong Fillmore suggests another criterion (1976, 310):

### 5. Is the usage of the expression situationally dependent for the child?

The fact that a particular expression always occurs in a particular well-defined context may be a clue to the linguist that this expression is an unanalyzed part of a set routine with which the child has become familiar through frequent repetition. Daily or otherwise regular activities in the child's life, such as greeting the family in the morning, mealtime rituals, greeting Daddy when he returns from work, or leaving the family to go to bed, can provide the child with regular "scripts," complete in setting, dialogue, and accompanying activities, which the child can come to know, anticipate, and eventually participate in. In 2.2.2 and 3.4.3 I will discuss at more length the potential importance of such routines in the process of language learning; here my focus is on the heuristic value to the linguist of such predictable contexts in identifying potential speech units.

An example of such a contextually defined early unit can be found in my data from Minh. At 14 months he produced a series of utterances, roughly, ['obɛdə'dɛ]. From his actions - he was pounding on a closed door and shouting to his older brother on the other side - it is clear that what he was saying was '*open the door.*' From other evidence about the stage of his language development it is clear that he was still at the one-unit stage (Peters 1977). Hence we cannot but conclude that *open the door* was a unit for him. A similar contextual dependence (along with evidence of lack of analysis) can be seen in Clark's two examples (just quoted): *sit my knee* and *I carry you*.

Another criterion suggested by Wong Fillmore (1976, 310) is

### 6. Is the expression a community-wide formula?

Within a given community certain phrases always occur in exactly the same form. Greeting and leave-taking formulas are particularly notable in this regard, for example, *good morning*, *how are you*. This invariance makes these phrases more likely to be perceived as units and concomitantly less susceptible to analysis. (In fact, even for adults they may become more and more unitary over time. Thus *how do you do* evolved into *howdy* as it became progressively more condensed [Bolinger 1975, 100].) On the other hand, such formulas occur often enough and predictably enough so that they are easily picked up by children and associated with the proper contexts. Children may even be coached in their appropriate use as part of a linguistic socialization process (Gleason & Weintraub 1978). Already at 1;2, Minh could say *thank you*: Although in my data this was articulated once as [təköt] and once as [kyɛ], it is clear what his intended target was because these utterances occurred in a context of giving and receiving .

An example of a child's unitary perception of another kind of community formula comes from Wong Fillmore. In this instance the community in question was the school and the formulaic phrase was *it's recess*. Her subject, 7 year-old Jesus, always condensed this to "s'briseh" (1976, 313). Note that although Wong Fillmore was dealing with older children learning a second language, she, too, was faced with the problem of "one unit or several?"

Even though these heuristics for identifying actual speech units will no doubt be added to and refined, they already provide substantial evidence that it should be possible for the linguist to determine at least some of the child's speech units. The difficulty of

making this determination should no longer be a serious impediment to considering the child's units rather than the adult grammarian's in describing the child's language.

### 1.3.2. *The place of the units in theory*

In addition to the difficulty of ascertaining what are in fact the child's units, another factor that has led linguists to overlook or reject such units has been the lack of a place for them in any existing model of learning or of language. In particular, the units that happen not to coincide with adult words are not used by the rules that the child is presumed to be trying to learn, and they apparently have no other use in language learning. Here I discuss the mismatch between such units and the linguist's expectations.

The assumption of most linguists studying the acquisition of syntax has been that the process moves from little utterances to bigger ones, in both length and complexity. Since the goal of such research is to discover when and how children learn to construct novel utterances of their own, the focus has been on buildup processes, starting with the smallest possible units. Brown describes the problem that the child first faces as follows: "In order to learn grammar, a child must segment the speech he hears into morphemes because morphemes are the ultimate units of grammatical rules" (1973, 390). The potential importance of longer units has been overlooked or dismissed. Thus Leopold justifies disregarding "early complete sentences like I see you because they were learned by mechanical phonetic imitation as units. The use of such stereotype phrases has nothing to do with the child's learning to put words together in an original sentence" (1971, 140).

In fact, the learning of such a "stereotype" or "formulaic" phrase as an unanalyzed whole has been seen as an impediment to its speedy analysis in terms of the child's growing productive system. Brown and Hanlon observed that

the parents of Adam, Eve, and Sarah [produced] certain *wh* questions at a very high rate in a period when the children did not understand the structure of *wh* questions . . . The children learned to produce the two most frequently repeated *wh* questions, *What's that?* and *What doing?*, on roughly appropriate occasions. Their performance had the kind of rigidity that we have learned to recognize as a sign of incomprehension of structure: they did not produce, as their parents of course did, such structurally close variants as *What are those?* and *Who's that?* and *What is he doing?* When, much later, the children began to produce all manner of *wh* questions in the preposed form (such as *What he wants*) it was interesting to note that *What's that?* and *What are you doing?* were not at first reconstrued in terms of the new analysis. If the children had generated the sentences in terms of their new rules they ought to have said *What that is?* and *What you are doing?* but instead they, at first, persisted with the old forms . . .

We suggest that any form that is produced with very high frequency by parents will be somehow represented in the child's performance even if its structure is far beyond him. He will find a way to render a version of it and will also form a notion of the circumstances in which it is used. The construction [sic ] will become lodged in his speech as an unassimilated fragment. Extensive use of such an unanalyzed or mistakenly analyzed fragment probably protects it, for a time, from reanalysis when the structure relevant to it is finally learned. [1970, 51]

If the memorization of such chunks of "complex linguistic material" does not feed into the process of learning grammar, is it, then, a complete dead end? Or is it perhaps possible that in our preoccupation with discovering adult grammar in the child's language we have failed to observe what happens to such material as the child's linguistic competence grows? Wong Fillmore's monumental study (1976) of five Spanish-speaking children (ages 5 to 7) acquiring English as their second language over nine months provides a model of how a linguist can observe longitudinally the place of certain kinds of speech formulas in children's evolving grammars. It also presents abundant evidence that, at least in this second-language situation, socially relevant formulaic speech was *not* a dead end, but led, through a documentable process of formulaic breakdown, first to formulaic frames with slots and eventually toward analysis into the conventional lexical items and syntactic patterns of the language.

Since 5- to 7-year-old children are not only cognitively more mature than children learning their first language, but also have increased social needs, they may be more prone to memorize long socially appropriate chunks of speech in order to maximize communication with a minimum of language. This difference has been noted by Hatch (1972,

33) and Hakuta (1974, 288), who worked respectively with a 4-year-old and a 5-year-old second-language learner, as well as by Wong Fillmore (1979, 211-12). In the next chapter, however, we will see some evidence that even first-language learners' memories may not be so limited as has been supposed. In any case, Wong Fillmore's work provides a model for a possible analysis of first-language learning, even though such an investigation will have to deal with the handicaps introduced by the less mature child who has poorer phonological control.

There are already hints in the literature that it is possible to observe formulaic breakdown actually occurring in first-language acquisition. Such a hint is found in Burling's report of his son Stephen's acquisition of Garo and English between 1;4 and 2;10. Stephen's approach to language seems to have been very much one of formulaic breakdown. Burling says:

I could readily observe the gradual acquisition of new grammatical constructions and repeatedly the same pattern was followed. He would first learn a number of examples of the construction by rote and at this stage it was generally difficult to tell whether he understood the meaning of the construction or not, though for the most part this seemed unlikely. He would then generalize the construction and learn to substitute other appropriate forms in the same construction. [1973, 89]

Krashen and Scarcella review some of the recent literature on the appearance of formulaic speech in language learning and claim to show that formulaic speech is, in fact, a dead end as far as the evolution of creative language is concerned. Although they acknowledge Wong Fillmore's evidence for formulaic breakdown, they raise the question whether language is generally acquired under circumstances similar to those in her study: "Clearly, the sort of early output demands [Wong] Fillmore's subjects had imposed on them, and the routinized [i.e., formulaic] predictable input are not present in most language acquisition situations" (1978, 295). They do, however, agree that both the nature of the input speech and the kind of speech expected from the child may affect the strategies a learner employs:

As we have seen in first language and second language acquisition by children, the 'gestalt' route is used by acquirers under similar conditions: where input is complex, and where conversational demands are present, acquirers may tend to use whole utterances in conversationally appropriate places without a full grasp of their internal structure. [295]

They deny, however, that formulaic speech learned under such circumstances leads to the acquisition of creative language. Wong Fillmore, on the other hand, draws the opposite conclusion, asserting that in fact

the analyses the learners perform are on those things which are most available to them - the well-practiced and familiar expressions they find in their own speech repertoires. How much more reasonable this seems than to assume that the language learner can somehow apprehend the fast-fading message produced by someone else, figure out what it means and how it is put together, and then relate it to similar utterances he has heard. Instead, what the children have to work with are expressions which make sense to them already, at least in the context of use. They know how an utterance can be used, even if they do not always know how it segments, what all of its individual components are, or how they function. Eventually they manage to sort out the parts of these utterances and to discover what other items might substitute for them. [1976, 301]

Krashen and Scarcella's doubts about the relevance of formulaic speech for language acquisition seem to stem from a pedagogical point of view rather than from the evidence they consider, since they grudgingly acknowledge the force of Wong Fillmore's study. They are, however, primarily concerned with the teaching of second languages in the classroom, and they raise valid objections to the audio-lingual method (a "pure formulaic" approach) as the sole method to be used, since it provides so little input for the creative construction process (297-8). Perhaps a crude formulaic approach has been overused in the second-language classroom, whereas possible refinements have not been sufficiently explored (see 5.3 for further discussion). In first language acquisition research, however,

this strategy has not really been recognized as a possible factor in the process. Wong Fillmore's work presents a challenge to reexamine first-language learning to determine the true role of formulaic speech in this situation (1976, 302). Much of the rest of this book will be concerned with how the formulaic approach can be integrated with the traditional assumption of increasing size in language development.

Krashen and Scarcella claim that since routines (i.e., speech formulas) appear to be immune to rules when they are first acquired (consider, e.g., the example just quoted from Brown and Hanlon of *what's that?* which did not get changed to *what that is?*), "this clearly implies that routines are part of a system that is separate from the process generating rule-governed, propositional language" (1978, 286). If this claim merely means that routines are not generated but are reproduced as wholes, then it is not saying very much - it is just a consequence of the definition of "routine."

If on the other hand the emphasis is on the separateness of the collection of routines from the system of generative processes, then these two are no more separate than the lexicon is from the generative process. For there is no evidence that what the linguist recognizes as unanalyzed routines are recognized and stored by the child any differently from items that we would call single words. Hence routines are only "separate" from the generative system insofar as the lexicon is separate. Reproducing a routine is in no way different from reproducing any other single item from the lexicon.

To focus on this separateness, moreover, is to miss the more interesting point, namely, on the one hand the relation between rules as they are induced and on the other hand the items, particularly the routines, stored in the lexicon. I will suggest that items in the lexicon are subject to analysis by the rules as they are induced and those items that yield to such analysis may lose their status as unitary items of storage. This in fact must be the main process used by children initially breaking into the language system. The "little units" and "big units" that Krashen and Scarcella claim are handled by separate systems will be seen to be two sides of the same coin.