

First verbs

During the second year of his daughter's life, Michael Tomasello kept a detailed diary of her language, creating a rich database. He made a careful study of how she acquired her first verbs and analyzed the role that verbs played in her early grammatical development. Using a Cognitive Linguistics framework, the author argues persuasively that the child's earliest grammatical organization is verb-specific (the Verb Island hypothesis). He argues further that early language is acquired by means of very general cognitive and social-cognitive processes, especially event structures and cultural learning. The richness of the database and the analytical tools used make *First verbs* a particularly useful and important book for developmental psychologists, linguists, language development researchers, and speech pathologists.

for Travis, of course

First verbs

A case study of early grammatical development

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Acknowledgments

This book has a longer and more checkered history than most. It is based on a diary of my daughter's early language kept in 1974; in my masters thesis and doctoral dissertation I analyzed selected portions of the data (Tomasello, 1977, 1980). A decade after its original compilation I computerized the diary, which made possible an analysis of the corpus as a whole. A few years later I found the time to analyze the data and write the monograph. I have large debts of gratitude at each of these three periods.

First and most important, I did not keep the diary alone. At least half of the observations were made by my late wife Susannah Ashley. She worked long and hard – without getting any academic degrees out of it – and proved to be a very sensitive observer. I could not have done it without her. Thank you, Susannah. And of course I could not have kept the diary without my daughter Travis. She worked long and hard too, although she may not have known it at the time, and has been very understanding in the years since about being treated as an experimental subject. Thank you, Travis, and I dedicate this book to you.

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The major part of my intellectual debt – both for this project as well as many others I have undertaken – is to my advisor and mentor Ernst von Glasersfeld. I have never met a more precise and profound thinker, or one more generous with his ideas, and much of what is in this monograph comes directly from him: the importance of verbs, the analysis of verbs into discrete operational steps, the importance of communicative intentions, grammar as a cognitive activity, and many more, I am sure, that I have always thought were my very own. Thank you for your ideas, Ernst, and I hope I have served them well.

Language games are the forms of language with which a child begins to make use of words. . . . When we look at such simple forms of language the mental mist which seems to enshroud our ordinary use of language disappears. We see activities, reactions, which are clear-cut and transparent. On the other hand we recognize in these simple processes forms of language not separated by a break from our more complicated ones. We see that we can build up the complicated forms from the primitive ones by gradually adding new forms.

– Ludwig Wittgenstein, *The Blue Book*

1

Introduction

In 1922 Ludwig Wittgenstein published *Tractatus Logico-Philosophicus*, a formal analysis of language in terms of logical propositions. He promptly quit philosophy. Seven years later when he returned to academic life Wittgenstein had a completely different view of language; he now began talking about “language games,” “forms of life,” “family resemblances,” and other ethnographic sounding phenomena. What happened in the intervening years is well known. He worked with children! And in particular he attempted to construct for the children he was teaching a dictionary that defined words in terms of the atomic propositions of predicate calculus. His utter failure in this attempt quickly convinced Wittgenstein that, whatever its other merits, formal logic was not the stuff of human language use (Fann, 1969).

In the 1960s linguistics came to be dominated by formalistic theories not unlike Wittgenstein’s *Tractatus*. Theories such as Transformational Generative Grammar (Chomsky, 1957, 1965) were designed to abstract language away from its use in meaningful communicative contexts and to describe and explain it in terms of disembodied algorithms. This approach was immediately transported to the study of early child language, but with no more success than Wittgenstein had in transporting his formal theory to children’s language. Researchers such as Brown (1973), Bowerman (1973), and Braine (1976) all concluded that young children do not operate with the formal apparatus of Transformational Generative Grammar. This failure caused a brief hiatus in the writing of formal grammars for early child language, but now the enterprise is back – and with a vengeance. Formal theories of “learnability” are positing structures even more abstract than those that previous researchers concluded were inappropriate for the analysis of early child language (e.g., Lightfoot, 1989; Pinker, 1984; see the papers in Roeper & Williams, 1987). Moreover, many researchers who are convinced that young children do not operate with the abstract paraphernalia of Generative Grammar continue to believe that older children and adults do operate in this

way, and therefore that our developmental theories must find a way to bridge the gap.

Developmental psychologists who study other areas of human cognition do not know what to make of these new theories – full of complex tree structures and arcane acronyms – that have been created, for the most part, by linguists unconcerned with other aspects of human development. The problem is that until recently a thorough and explicit alternative to Generative Grammar has not been available. The situation is beginning to change, however, with the work of researchers and theorists such as Lakoff (1987, 1990) and Langacker (1987, 1990), who speak of what they do as Cognitive Linguistics, and Bates and MacWhinney (1979, 1982, 1987, 1989) Givón (1979, 1989), and van Valin (in press), who speak of what they do as Functional Linguistics. One coherent paradigm incorporating both of these perspectives is only now beginning to emerge, its most common appellation being Cognitive Linguistics (see, e.g., the papers in Rudzka-Ostyn, 1988, and the new journal *Cognitive Linguistics*). In this new view, human languages are best thought of not as formal theories, but as cultural products that embody in basic ways both the cognition of which they are composed and the social–communicative ends that they have evolved to serve. Research within such a paradigm is thus aimed not at constructing more elegant formalisms but at uncovering the cognitive structures and communicative strategies that underlie human language use. It is not totally misleading to say that the move from Generative Grammar to Cognitive Linguistics is analogous to Wittgenstein’s move from his earlier to his later philosophy of language.

1.1. Cognitive Linguistics and the developmental approach

In this analysis of one child’s early language development I employ a Cognitive Linguistics framework. There are a number of reasons for this choice, most of which emanate from the fact that I am a developmental psychologist, not a linguist. Two are of central importance for current concerns: (1) Cognitive Linguistics describes language structure in terms of basic psychological (cognitive, social–cognitive) processes, and (2) Cognitive Linguistics is congenial to developmental analyses. Neither of these claims may be made of more formalistic approaches.

First, it is important to me as a psychologist that descriptions of children’s language fit with descriptions of their cognition and social cognition. Generative Grammar and its variants have worked very hard to make sure that their descriptions of human linguistic abilities, especially syntax, do *not* fit with more general cognitive and social–cognitive descriptions – what Bates (1984) has called their “scorched earth” policy.

Generative grammarians have made special attempts to argue, for example, that nouns and verbs have nothing whatsoever to do with objects and actions; that the subject of a sentence has nothing whatsoever to do with topic of conversation or focus of visual attention; and that the construction of a sentence from individual words has nothing whatsoever to do with the manual construction of hierarchically organized objects out of simpler objects. Instead, generative grammarians have chosen to focus exclusively on the supposedly autonomous aspects of formal syntax (changing the definition of syntax where necessary to preserve this autonomy; Lakoff, 1980), and then to describe these aspects in terms of “rules” of grammaticality that have nothing to do with human competencies or the way they are described in other cognitive domains. In all, for most psychologists there is a clear psychological reality to such things as symbols, concepts, and communicative intentions, but we are not so sure about such things as predicate raising, *wh*-movement, and empty categories.

Cognitive Linguistics is a much more psychologically based approach to linguistic competence. At its core is the cognitive commitment, which enjoins linguists to take advantage of, and to attempt to relate their findings to, research in the other cognitive sciences (Lakoff, 1990). Most radically, many cognitive linguists believe that languages are best described and explained *exclusively* in terms of more basic processes of human cognition and communication. Langacker (1987), for example, grounds his entire theory in symbols and cognitive processes for operating with symbols. On the basis of their shared experience and cognition and for purposes of communication, a group of human beings creates a “structured inventory of symbolic devices” – of which there are many types, serving many different functions including syntactic functions (cf. Wittgenstein’s, 1953, analogy of a toolbox). To construct communicative messages, human beings take items from this inventory (and from their inventory of nonlinguistic means of communication) and integrate them into larger symbolic wholes. There is nothing else in human language other than the symbolic inventory and general cognitive processes for using it; that is to say, there are no hidden rules, principles, parameters, linguistic constraints, or deep structures – just as there are none of these things in other human skills.

Putting together novel [linguistic] expressions is something that speakers do, not grammars. It is a problem-solving activity that demands a constructive effort and occurs when linguistic convention is put to use in specific circumstances. Creating a novel expression is not necessarily different in fundamental character from problem-solving activity in general, and the speaker’s knowledge of linguistic convention is but one of the many resources he brings to bear in finding a solution. (Langacker, 1987, p. 65)

A major piece of evidence for this point of view comes from recent linguistic analyses (e.g., Lakoff, 1987; Taylor, 1989) and research in experimental psycholinguistics (e.g., the studies reported in Bates & MacWhinney, 1989, and Corrigan, Eckman, & Noonan, 1989). These analyses and findings strongly suggest that linguistic categories of all types – from words to syntactic categories such as “sentence subject” – display prototypical structure. This is the same structure displayed by other types of human categories: graded structure with more central and more peripheral properties, no one of which is essential. The fact that linguistic categories are structured prototypically indicates that they are formed via general cognitive processes and accounts quite naturally for the fact that many, if not most, of the linguistic structures with which human beings operate involve figurative extensions of more basic cognitive categories (Lakoff, 1987). Prototypical structure is fundamentally incompatible with the essentialistic categories (defined in terms of necessary and sufficient conditions) required by formal grammars.

The second reason for my choice of a Cognitive Linguistics framework is that it is much more congenial to developmental analyses. Because it uses essentialistic categories and rules, Generative Linguistics is not only not congenial to development analyses, it is fundamentally hostile. Chomsky (1986) makes this very clear in his claim that Generative Grammar *requires* an assumption of instantaneous learning:

Irrespective of questions of maturation, order of presentation, or selective availability of evidence, the result of language acquisition is as if it were instantaneous: In particular, intermediate states attained do not change the principles available for interpretation of data at later states in a way that affects the state attained. (pp. 53–54)

Learnability theorists claim something very similar. The Logical Problem of Language Acquisition is basically how children can acquire the unique and abstract structures of Generative Grammar from “unordered strings” of linguistic data. Their solution is the “continuity assumption,” that is, the assumption (following Chomsky) that indeed children cannot acquire these abstract structures in any direct way and, as a result, they must be innately given and unchanging (continuous) throughout development (e.g., Pinker, 1984). To save the formalism, Learnability theorists must attribute to children’s earliest language precisely the kinds of structures it would seem to be lacking.

To developmental psychologists this whole approach is, in a word, backward. The developmental approach, as employed by most developmental psychologists, begins with an attempt to describe children’s language, or any other of their skills, in terms of concepts and structures that are (*ex hypothesi*) a part of their, not our, experience. Developmentalists then try to determine each of the steps in the development

of this skill, from origins to full maturity. *Contra* Chomsky, the intermediate steps in the process are absolutely crucial because some steps cannot be taken until others have been completed (e.g., Gottlieb, 1983, 1990). Thus, for example, by the time children are ready to learn the embedded clauses that Learnability theorists are so fond of, they are not faced with an unordered string of symbols. Their linguistic systems by this point in their preschool years allow for the formulation of a variety of sophisticated linguistic structures. The new skill of embedded clauses then requires not a huge logical leap but only a small empirical step beyond existing linguistic skills. Through a complex of developmental processes, the structure of language changes in fundamental ways during human ontogeny (cf. Bamberg, Budwig, & Kaplan, 1991; Bloom, 1991).

Cognitive Linguistics is much better suited to the developmental approach. First, it relies on general cognitive structures and processes that allow investigators to consult research in other domains of cognitive development. This approach helps to determine the nature of the child's competencies at particular development levels and provides an additional "constraint," if you will, on children's early language. Second, and moreover, the prototypically organized concepts and categories of Cognitive Linguistics are much more open to the possibility of true developmental change. Categories that do not have essential properties can evolve naturally and gradually, sometimes into very different entities. This provides researchers with the possibility of reconstructing the many intermediate steps required in the acquisition skills as complex as those involved in linguistic communication.

None of this is to deny, of course, the existence of biological prerequisites for language acquisition. It is just that in the Cognitive Linguistics view, this does not include an innate, specifically linguistic module. Infants come into the world prepared to act on objects and form concepts of them and their properties, and to form concepts of the actions themselves and their properties (Piaget, 1954). They come into the world prepared to learn and use conventional symbols, and to construct categories of these symbols (Bates, 1979). They come into the world prepared to use the vocal-auditory channel for communication (Kuhl, 1979). They come into the world prepared to interact with, to attend jointly with, and to imitate other human beings (Trevathan, 1979). They are prepared in other ways as well. The point is that children then bring this preparedness to their social encounters with other human beings, who interact with them using a system of symbolic communication that has evolved over thousands of years of cultural evolution. They learn their linguistic skills in and from these interactions, with what they learn at any particular time both depending on and helping to change their current developmental level. The quarrel between Cognitive Linguistics

and Learnability approaches is thus not whether there is a biological preparedness for language acquisition, but the nature of this preparedness. Cognitive Linguistics would claim that the structure in children's language comes not directly from their genes but rather from the structure of adult language, from the structure of children's cognitive and social-cognitive skills, and from the constraints on communication inherent in expressing nonlinear cognition into the linear channel provided by the human vocal-auditory apparatus (Bates, Thal, & Marchman, 1991).

Everyone is agreed that we cannot hope to understand the acquisition of language until we understand something of the structure of language. But just as developmental psychologists have come to recognize that the Piagetian formalization of cognition in terms of mathematical group theory is a hindrance rather than a help (Overton, 1990), it may now be time to recognize that the formalizations of Generative Grammar/Learnability theory are not so helpful either. Cognitive Linguistics would seem to be a much more promising approach for researchers interested in the *psychology* of language and its development.

1.2. The importance of verbs

A key to the Cognitive Linguistics approach to language development is the child's acquisition of verbs. Verbs are linguistic symbols used to designate events that in many cases are highly complex: one or more entities undergoing one or more changes of state. The verb *give*, for example, is used to designate an event involving at least three entities with well-defined roles – giver, thing given, and person given to – each of which undergoes a specific change of state. Because conceptual roles such as these are an integral part of verb meaning, the conceptual situations underlying verbs can be seen as providing a kind of “frame” for structuring larger linguistic expressions such as sentences. The semantic structure of verbs thus contains what have been called “grammatical valences,” and verbs are therefore responsible for much of the grammatical structure of a language. This obviates the need in many cases for more abstract syntactic principles and rules (e.g., Fillmore, 1982; Langacker, 1987; and even Bresnan, 1982; cf. Boland, Tannenhaus, & Garnsey, 1990, for experiments demonstrating the point).

The other key element of grammatical structure is of course syntactic devices for linguistically marking the conceptual roles that verbs create (e.g., word order and case markings). These may be seen as basically second-order symbols because they indicate how the first-order symbols are to be construed (e.g., *John* is the initiator of the action or the recipient of the action). This is typically a small, closed class of items designating

a highly constrained set of syntagmatic relations. In Talmy's (1978) formulation, contentives such as nouns and verbs specify the elements of a "cognitive scene," whereas syntactic devices operate on these to specify its structure. It is important also that syntactic devices may in many cases come to operate "schematically" – that is, they may operate not on individual linguistic symbols (e.g., *John*) but on linguistic categories of various sorts (e.g., agent, subject). Together, verb-argument structure and the syntactic marking of arguments and argument categories form the backbone of human grammatical competence.

In the study of child language acquisition, the importance of verbs is becoming more widely recognized. Bloom has been most prescient in this regard (see 1981 for an early review, 1991 for a later review). She and her colleagues have investigated a number of ways in which verbs structure early grammars, most especially their role in leading children to the acquisition of complement clauses and other elements of complex sentences (e.g., Bloom, Lifter, & Hafitz, 1980; Bloom, Rispoli, Gartner, & Hafitz, 1989). From a very different theoretical point of view, Pinker (1989) has more recently investigated a number of interesting phenomena involving the predicate-argument structure of early verbs, and constraints on how these are generalized to novel verbs. And in a recent study of early grammatical development, Bates, Bretherton, and Snyder (1988) have argued and presented evidence that children's initial verb vocabularies are very good predictors of other aspects of their early grammatical competence.

The specific idea of most importance for current purposes – implied by all of these researchers but fully explicated by none of them – is that the acquisition of verbs as single-word lexical items during the 2nd year of life is the major turning point in children's transition to adultlike grammatical competence. The grammatical valences contained in children's first verbs simply "beg" to be completed into sentences. The important theoretical point is that a focus on the role of verbs as conceptually complex lexical items is essential if we are to account for children's early grammatical competence in terms of basic cognitive and social-cognitive skills, without resorting to adultlike linguistic categories and rules.

1.3. Plan of the monograph

The study reported in this monograph is an attempt to explore more fully the idea that children's first verbs are key organizing elements in their early grammars – using a Cognitive Linguistics approach. The data come from a diary of my daughter's earliest verbs and sentences during her 2nd year of life. I will attempt to provide analyses of these data that

illuminate the way my daughter acquired her early verbs, the cognitive structures that might have underlain her early verbs, and the role verbs played in structuring her early sentences and grammar. The first three chapters, including this one, provide the theoretical and methodological background for formulating these questions more precisely. The middle three chapters present the basic data of the study, in a discursive diarylike format. The last three chapters provide analyses that directly address specific hypotheses about the child's early verbs and their role in early grammars, and, in so doing, they try to point the way to a model of early language development in which linguistic communication is seen as a fundamentally cognitive and social-cognitive activity.

One final point. Although I have contrasted in this brief introduction Generative Grammar and Cognitive Linguistic approaches to language acquisition, the current study is not designed in any way to decide the issue. It cannot do this most importantly because the analyses stop at 2 years of age – just when the syntactic action is beginning for Learnability theorists. But I do hope that the study will contribute to the debate. Because the Cognitive Linguistics approach I employ relies explicitly and exclusively on cognitive structures known to be possessed by children of this age, the issue in the end will be whether these analyses leave anything out of account in the 2-year-old child's linguistic competence. Insofar as they are sufficient and do not leave anything out of account, one of three conclusions may be drawn: First, like adults, 2-year-olds operate with Universal (Generative) Grammar, but the observable linguistic forms they produce do not reflect this for various reasons of "performance"; second, 2-year-olds operate with a cognitively based system of language, but this is transformed by various epigenetic processes into something closer to Generative Grammar later in development; or third, 2-year-olds do not operate with the innate apparatus of Universal (Generative) Grammar and so it is probable that no one else does either. If my analyses are sufficient to account for the 2-year-old child's language, my own inclination is to draw the last of these conclusions and to pursue in future investigations how Cognitive Linguistics might be used to ground the more complex linguistic structures of older children and adults in their more general cognitive and social-cognitive capacities.

In the beginning was the verb

In this chapter I lay out more specifically the goals and hypotheses of the study. In a first section I consider children's early verbs as lexical items, first with respect to their underlying cognitive structures and then with respect to the learning processes by which they are acquired. In a second section I focus on children's earliest sentences, first with attention to the role of verbs and their associated conceptual structures in these sentences and then with attention to the developmental processes by means of which more abstract syntactic categories are formed. I conclude with an explicit listing of the goals and hypotheses of the study.

2.1. Children's first verbs

Children's early vocabularies often show a preponderance of object labels and other words that adults categorize as nouns – sometimes called nominals (Gentner, 1982). Recent studies, however, have found that nonnominal expressions (including some adult verbs) are present from the very earliest stages of the language development of many, if not most, children (e.g., Barrett, 1983; Gopnik, 1981, 1988; Tomasello & Farrar, 1984; see Gopnik & Meltzoff, 1987, for a review). Some children are even reported to learn nonnominals first and to rely on them quite heavily in their early language (e.g., Adamson & Tomasello, 1984; Bloom, 1973; Gopnik, 1981, 1988), and this pattern may in fact be statistically predominant in children learning languages such as Japanese and Korean in which nouns are less communicatively important than they are in English (Clancey, 1985; Gopnik & Choi, 1990). Young children can be trained to acquire some types of nonnominal expressions at the same early stage of development that they can be trained to acquire nominals (Tomasello & Farrar, 1986a).

Nonnominal expressions, however, are a diverse lot and compose various subsets. Consequently, this literature has referred to these subsets with a variety of confusing terms, including *action word*, *function word*, *change of state word*, *verb*, *relational word*, *cognitive-relational word*, *modifier*,

movement word, *social word*, and *personal–social word*. Some of these focus on the referent of the term and others focus on the role of the term in the child's linguistic system; some rely on the status of the word in adult language while others do not. To make matters even more complicated, many of children's early "words" are not words at all because they are not symbolic (Bates, 1976). Some of these are embedded and only exist in particular contexts, and thus are more a part of the event than a representation of it. These presymbolic forms (also called such things as *protolanguage* and *prelexical forms*) may be used on different occasions in association with any of a variety of referents, including both actions and objects, before the child settles on a more univocal usage (Bloom, 1973; Dromi, 1987).

I do not wish to become bogged down in terminological wrangling, but it is important to be explicit about how I refer to the phenomena of current interest. First, I refer to words that are a part of the event rather than a representation of it (i.e., they are nonreferential) as *presymbolic forms*. For the child's words that are truly referential, I use a variety of terms that focus on the referents of words, not on their functioning in a grammatical system – such nontechnical terms as *object labels*, *proper names*, *property words*, and so forth. Most important for current purposes is the term *verb*. The problem is that there is really no good substitute for this adult term, which sometimes implies functioning in a grammatical system, which I do not mean to imply. Other possibilities such as *action word* and the like carry other unwanted connotations and fail to imply the grammatical valences that are such an important part of verb meaning. And so, reluctantly, I simply use the term *verb*, being ever mindful that child verbs may differ in important ways from adult verbs.

In adult language verbs are distinguished by two characteristics, one functional and one semantic. First, verbs function as predicates in larger symbolic expressions, that is to say, they are about something else. An action or state or change of state assumes some entity that performs or undergoes the process (Gentner, 1982); a verb is thus predicated of that entity. But not all predicates are verbs; adjectives, for example, also designate properties that can be predicated of things. The second characteristic is therefore semantic (notional). Verbs designate processes, which have as an integral part of their conceptualizations a temporal dimension (McShane, Whittaker, & Dockerell, 1986), and this temporal dimension actually plays itself out in the cognitive processing of the word. In Langacker's (1987) terms, verbs require "sequential scanning." Thus, while the nouns *parade* and *skiing* refer to temporally extended events, in this noun form they are processes treated as though they were things (no sequential scanning). When used as verbs, on the other hand, these

same words now make their processual nature salient ("He paraded around the house" or "He is skiing"). In their verb form these words require a sequential processing in a way that nouns do not; the noun is a snapshot, the verb is a moving picture. It is important that this analysis applies also to states such as *remain* and *know*, which involve durative states; neither of these could be identified from a snapshot alone (which distinguishes them from words for simple properties).

I use these same two criteria for identifying children's early verbs: I call a verb any word that the child uses to predicate a process of something, regardless of that word's status in adult language. I have already followed this procedure in previous work, for example, in Tomasello (1987) in which I argued that adult prepositions such as *off* are functioning for the child as verbs in such sentences as the request "Hat off" (meaning "Take the hat off"). Conversely, if an adult verb is used in some nonprocessual or nonpredicative way by the child, it is not considered a verb for her.

2.1.1. Cognitive bases of early verbs

The only two models for the semantic representation of early verbs are those of Antinucci and Parisi (1973, 1975), who employ a generative semantics model, and Gentner (1975, 1978), who uses a model from cognitive psychology. (Pinker's [1989] model is aimed at later development but in any case is of the same type as these two.) In both of these approaches children's early predicates are analyzed in terms of certain primitive predicates of the type used in predicate logic (first-order predicate calculus). For example, *kill* might be analyzed as X "CAUSE" Y "BECOME" "NOT" "ALIVE" or *sell* as X "CAUSE" Y "TRANSFER" to Z [and at the same time] Z "CAUSE" \$ "TRANSFER" to X. Neither of these theorists has a cognitive–developmental theory underlying the attributions of such structures to children, but merely take the analyses of adult language and modify them slightly (or in Pinker's case, not at all). For example, in analyzing one child's use of the word *give*, Antinucci and Parisi attributed to her the representation X "CAUSE" Y "BECOME" "COINCIDE" Z. In adult language, *give* would be analyzed not with "BECOME COINCIDE" but with some type of change of possession. But since Antinucci and Parisi do not believe that their subject really understood possession, they attribute to her the simpler notion of someone moving something to within the spatial proximity of another person.

No matter how plausible such modifications may be, the problem is that they begin from the wrong direction; the attempt is to impose adult linguistic models on the child, with some ad hoc modifications. Howe

(1976) criticized such a process, stressing that we should not begin with adult meanings and “simplify” them in a way that seems plausible for the child. Howe’s suggested alternative is as follows:

This [alternative] approach would begin with the possibility that the . . . utterances of young children refer to situations to which adults would never refer, because the situations children can conceive of are different from the situations adults can conceive of. Research would begin by specifying the situations children can conceive of and investigating how they make reference to these situations. . . . It would be a mistake to resolve the ambiguities in their speech by any strategy that reconstructs the reference-situation through adult eyes. Reconstruction should proceed from the child’s point of view. (p. 45)

It is legitimate to question whether this is a feasible alternative (Rodgon, 1977). Because we cannot study children, or anyone else, completely from their point of view without the influence of our own conceptual structures, we are faced with Quine’s (1960) problem of “radical translation.” The problem may not be escaped entirely, but we may at least attempt to lessen its impact by proposing a relatively explicit cognitive–developmental theory in terms of which we may characterize precisely how the child construes events at various stages of her development – in the same way that an anthropologist formulates a theory of a culture’s world view in order to help in understanding its language. This will not eliminate our “adultocentric” tendencies altogether, but it will at least constrain them in principled ways and lead to formal semantic representations closer to the child’s point of view than do approaches that begin with adult models and subtract away components in an unprincipled way.

I begin, therefore, with the observation that children live in a dynamic conceptual world, as both Piaget (1952, 1954) and Nelson (1985) have emphasized. Concepts of all types, including both objects and actions, must be extracted as invariants from larger, temporally extended structures. These may take the form of sensory–motor schemes based on concrete actions, or event structures involving culturally organized activities in which the child participates. (I use the term *event structures* to refer to both of these manifestations of temporally extended structures.) In the Cognitive Linguistics account, verbs carve out “processes” (Langacker, 1987), which I identify with event structures of various shapes and sizes. (In chapters 7 and 8, I spell out more directly the connections between verbs as the basic organizational elements of early grammar and event structures as the basic organizational elements of early cognition.)¹

¹ The characterization of children’s conceptual world in terms of objects in motion neglects their knowledge of other persons and their intentional states. This knowledge is clearly crucial in the learning process, as will be discussed in section 2.1.2. It also comes into

Following Edwards (1973) – and many linguists before him – I would like to distinguish two types of verb–event concepts: change of state and action. Change of state concepts concern those processes in which the defining feature is something relatively abstract happening to an experiential entity, for example, an object moving, or opening, or disappearing. This can happen to a variety of objects in any number of ways. In some cases an agent may cause the change of state – someone gives something to someone or puts something somewhere – but still the defining feature of the concept is what happens to the object without regard for the agent's actual behaviors (e.g., giving can occur in many ways). Action concepts, on the other hand, concern those processes defined by the actual behaviors of some animate or inanimate being – for example, someone runs, or licks, or looks, or rolls a ball. In many cases an object of some type is involved in the action and it sometimes changes state – someone throws something or eats something or an object is spinning. But the defining feature of these concepts is in all cases the specific action involved, not any state changes in the object. This is not because changes of state and activities are different classes of events, of course, but because they are different construals of experience, in many cases of the same event. The same event might be described, for example, as either “giving him the pen” (change of state) or “throwing him the pen” (action) depending on whether we wish to focus on the change of state that the object underwent or the action of throwing. Langacker (1987) refers to these as two different “profiles” of the same event.

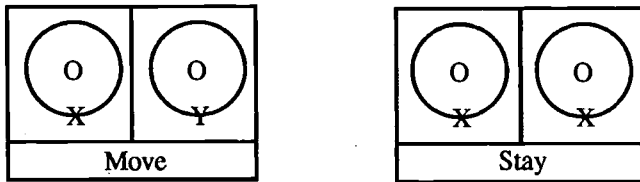
It is important to distinguish these two types of process because the cognitive structures that underlie them are different. In the case of change of state words, we must begin by recognizing that child and adult concepts are clearly not the same. Would anyone argue that the basic concepts underlying the child's use of *give* and *more* are the same as the adult's? This means that we must be very careful to specify the concepts in terms of which the child conceptualizes the meanings of these words. To begin with, we have Piaget's (1954) Kantian theory that the child's sensory–motor world is composed of objects and their spatial, temporal, and causal relations. More specifically, we have research documenting how these sensory–motor structures are manifest in children's behavior with objects at the developmental period during which they are learning their first change of state words.

Emergence of the first change of state words is associated quite strongly with the last two stages of object permanence development. McCune-Nicolich (1981) was the first to discover such a link as she reasoned that

play in the cognitive representations of certain words such as mental state verbs and perhaps some others for which intention is a key element (which I represent as a type of causality – see chapter 3).

performance on the Stage 6 object permanence task – the successful tracking of an object through several spatial displacements, some of which are invisible – requires being able to conceive of the “dynamic states of objects,” that is, changes of state or transformations that objects undergo. She found that children learn their first relational words (e.g., *more, down, gone*) in association with entry into Stage 6 object permanence development. Tomasello and Farrar (1984) found something slightly different, and demonstrated an even closer link in the process. At the same time children were beginning to solve Stage 5 object permanence tasks – the successful tracking of visible displacements – they were beginning to use words to refer to the visible movements of objects: *up, move, fall-down*, and so on. It was not until they began solving Stage 6 tasks, involving invisible displacements, that the children began using words to refer to invisible states and movements: *gone, away, no-more*, and so on. Tomasello and Farrar (1986a) corroborated these results experimentally, and helped to rule out alternative explanations of these correlational results, by finding that children could be taught to use visible movement words during Stage 5 object permanence (as well as object labels) but they could not be taught to use invisible movement words until they were solving Stage 6 invisible displacement tasks.

There is thus solid empirical research documenting something of the nature of the conceptualizations underlying children’s early change of state words: These words depend on the child’s ability to conceive of the movements of objects through various spatial transformations. Following Langacker’s (1987) general approach, I believe that we can formally represent the child’s experience of such events by modeling iconically objects and their states (mostly involving basic spatial relations) at various steps in the constituent sequence. Each step in the sequence is conceived of psychologically as a single “moment of attention” (snapshot), each of which designates a single state (no step contains within it a designation of a process; von Glasersfeld, 1972). And so, for example, a formal representation of *move* might be something involving at least two snapshots in sequential order: the first with an object (*o*) at location *X*, and the second with that same object at location *Y*, as in the diagram below. States such as *stay* also require at least two sequential steps in order to establish that they are indeed enduring and not momentary snapshots of a change of state; that is to say, a single snapshot of an object at location *X* does not allow us to determine if it is staying or moving. States other than locative “at” states may also be represented, for example, locative states involving such specific locations as “on,” “off,” “in,” “out”; possessive states; perceptual presence and absence; and various other nonlocative states. All of these are variations on the basic theme of objects in various spatial–temporal–causal relations.



This method of representation is treated more fully in chapter 3 on methods and elsewhere in the book as it is used to account for all of the different change of state words used by the subject of this study. For now the important point is that these iconic diagrams do not rely on adult linguistic descriptions but rather on a theory, however humble, of the child's sensory-motor cognition.

In the case of action verbs, we know much less. The conceptualizations underlying action words must be composed of very specific visual and/or kinesthetic features involving the movement of objects or persons or body parts or, in some cases, inferences about the mental processes of others. For these words, as opposed to change of state verbs, the child's conceptualizations would not seem to be much different from those of adults. This is because both adults and children represent the concept *licking*, for example, in terms of concrete sensory-motor concepts involving a tongue moving and touching another object; and there would seem to be very little development in these concrete concepts past the sensory-motor period. No one knows how children represent mental processes, but we do not know much about how adults do it either. My procedure in the current study will thus be simply to describe the child's use of activity verbs, without formalization, noting any cases where her usage differs from that of adults. Where it does not differ, I assume that the child represents the meaning of the word in terms of roughly the same sensory-motor concepts as the adult.

Overall, then, verbs are thus distinguished from other words conceptually by the role of temporal sequence, and changes of state and action verbs are distinguished from each other on the basis of which aspect of the event is profiled by the word. Very little is known about what specific kinds of concepts and conceptual structures underlie the specific verbs learned by children early in their development. Some general hypotheses have been proposed – for example, that children learn words for their own actions before they learn words for observed actions, and that when they do learn words for observed action it will be first for processes not involving intentional actions (Huttenlocher, Smiley, & Charney, 1983; cf. also Huttenlocher, Smiley, & Ratner, 1983); that children learn words for simple, perceivable state changes before they learn words for more complex and abstract changes of state (Edwards & Goodwin, 1986); and

that children have a bias toward verbs defined in terms of results rather than instruments or the actions themselves (Behrend, 1990). None of these hypotheses has overwhelming empirical support, and none of them is specific about the specific types of concepts and conceptual development that might underlie particular verbs. One goal of this study is to achieve, at least tentatively, some such specificity.

2.1.2. *Early verb learning*

The second issue concerning verbs as lexical items is how they are learned. The problem in current terms is how the child is to know what aspect of her perceptual experience is being indicated by a novel word she hears (Does Quine's "Gavagai" refer to the rabbit, its foot, its color, its action, its speed, and so on ad infinitum?). There are currently two theoretical approaches to this problem: the constraints–principles approach and the social–pragmatic approach.

The constraints–principles approach posits that children are equipped with specifically linguistic "constraints" that help to delimit the referential indeterminacy of linguistic structures. Markman (1989) thus posits such things as the Whole Object constraint, which holds that a novel word is the name of a whole object (and not an attribute, e.g.), and the Taxonomic constraint, in which a novel word refers to a class of objects taxonomically (not thematically) related to one another. These a priori constraints help the child to determine what aspect of experience is being singled out by the adult. (A more thorough and reasonable account of this approach is presented by Golinkoff, Mervis, & Hirsh-Pasek, 1991.) The theory does not, however, address the question of how the child determines the particular object referents of particular object labels within these overall constraints.

Markman does not propose any a priori constraints that help children to learn their early verbs (nor does any one else I am aware of). The only theory that proposes something similar is Gleitman's theory of "syntactic bootstrapping" (e.g., Landau & Gleitman, 1985). Gleitman proposes that syntactic cues in the linguistic context surrounding verbs play the role of constraints. Thus, the child who hears "Big Bird is gorp-ing Cookie Monster" will know that *gorp* is a transitive verb, while the child who hears "Big Bird is gorp-ing" will know that it is intransitive (Naigles, 1990). This of course requires that the child know some important syntactic distinctions of the language she is learning *before* she learns verbs, and so Gleitman (1988) proposes that much syntactic structure is innate. Finer distinctions among closely related verbs may also be made syntactically, in this case by contrasting the ranges of syntactic contexts in

which the verbs participate, and Gleitman claims that, in adult language at least, each verb participates in a unique set of syntactic contexts.

While acknowledging that later in development syntactic cues are very important in learning words of all types, few theorists believe that syntactic bootstrapping can be the whole story of early verb learning (not even Gleitman in her most recent formulations, e.g., 1990). Two-year-old children simply show no evidence of being as syntactically sophisticated as they would need to be for Gleitman's theory to work. Although 2-year-old children may use syntactic cues to make global distinctions such as transitive–intransitive (the only kind so far studied empirically), these cues will not help in distinguishing the many individual verbs within these classes. And children use many of their verbs in identical sets of syntactic contexts in early production, which gives at least some indication that they do not differentiate them syntactically. Regardless of their later syntactic abilities, it would seem that in the early stages young children clearly must be relying to some degree on associating the novel verb they hear with some aspects of their nonlinguistic experience.

The other approach to lexical acquisition is through the social–communicative context (e.g., Bruner, 1983; Nelson, 1985, 1988). In this view, children learn new words by hypothesizing what adults are attempting to do with them. They do this both at the level of distinguishing general classes of referent (as do Markman's and Gleitman's constraints) and in determining the particular referents of particular words (as constraints do not). In this view, young children do not in any case experience the indeterminacy of philosophers. This is because they hear a novel linguistic expression not in a laboratory, where nonlinguistic cues are carefully controlled, but rather in a social context replete with information about the new expression's reference. Of particular importance in early development is the referential information provided for children in their routine nonlinguistic interactions with adults (Bruner, 1983; Snow and Goldfield, 1983). In many cases children know that the adult is referring to a particular object because they understand from previous experience what the adult is doing in this situation (e.g., hiding an object, getting food from the refrigerator). More generally, Tomasello and Farrar (1986b) have argued and presented evidence that beginning language learners learn new words *only* when they are participating in a joint attentional interaction (nonlinguistically defined).

When the social–pragmatic theory is invoked to address the acquisition of verbs, it becomes clear that there are at least two main differences between the acquisition of concrete nouns and verbs. The first difference is in what might be called the “packaging problem.” Whereas a concrete noun almost invariably maps onto a whole object (Markman, 1989), in the case of a verb it is much more uncertain what aspects of a situation

are relevant for its meaning. As Talmy (1985) and Gentner (1982) have pointed out, a verb may be defined in diverse ways, for example, by the manner of motion (e.g., *to float*), by the instrument involved (e.g., *to hammer*), by the result achieved (e.g., *to empty*), or by the action performed (e.g., *to wave*), depending on the particular language involved. And there are other semantic elements, such as the causative, that may or may not be a part of a verb's meaning; for example, we do not say "He disappeared his boot" because the verb *disappear* does not contain a causative element, but we say instead "He hid his boot" (or "He made his boot disappear") because the verb *hide* does contain a causative element (cf. Bowerman, 1982). The packaging problem thus seems much more difficult in the case of verbs than in the case of object labels – not only because there is more conceptual complexity to package, but also because there would seem to be few linguistic generalizations across verbs to help narrow the packaging options in a particular case.

The second difference is that the actions and changes of state to which verbs refer are mostly transient. This means that, unlike the case of object labels, the referent situation in the case of verbs is quite often not perceptually available to the child when the word is uttered (over half the time; Tomasello & Kruger, in press), nor can it be located by visual or other perceptual inspection of the immediate context. Instead, the child mostly hears verbs when the adult requests an action of her, labels an event that either the child or adult is about to perform, or names an event that has already been completed. One- to two-year-old children learn verbs nonetheless, and in fact they learn better in these nonostensive contexts than in the ostensive contexts that most researchers think of as canonical in early lexical development (Tomasello & Kruger, in press).

One reason why children might learn verbs better in some nonostensive contexts is that these contexts provide more and better information to help with the packaging problem – in particular, information about the speaker's intentions (cf. Gopnik, 1982; Huttenlocher, Smiley, & Charney, 1983). Thus, in learning an object label the child's task is most often to pick out one of the many perceptually available objects an adult intends to indicate; a simple point by an adult, or even consistent visual regard, will usually be sufficient for this task. In the case of verbs, the task is most often not picking out (there are usually not multiple actions present) but packaging. Pointing is in many cases not sufficient for this purpose, and thus the added information provided by the adult's non-linguistic behavior in many nonostensive situations is needed – for example, mother pushes the child to the car saying "Let's go," or struggles with the child saying "Let me wipe your face." We are a long way from knowing all of the factors involved in this process, but it is clear that children are learning their language not by mapping words onto per-

ceptual experiences, but rather by attempting to understand what the adults with whom they are interacting are doing with their language.

None of this is to ignore the powerful role played by the child's knowledge of language as another source of information about a verb's meaning. At some point in development they make use of the linguistic context surrounding a novel verb and in some cases this may even be necessary. Also, in the early stages at least, this linguistic context contains not just syntactic information à la Gleitman but also knowledge of the referents of the nouns involved (e.g., if an adult says "Ball roll," knowing the word *ball* cannot hurt the comprehension process). In addition, at this early stage children also make extensive use of contrast information (Clark, 1988, 1990) such that their knowledge of other verbs helps them to narrow down the aspects of the current situation relevant to the new verb's meaning (e.g., if an adult says "Pass the salt," the child will need to determine why the adult did not choose the expected *give*).

It is important to be clear that in the social-pragmatic view of language acquisition, all sources of information are used for one thing: to determine the speaker's intentions. Tomasello, Kruger, and Ratner (1991) argue, in fact, that determining intentions is a basic form of cultural learning, as distinct from social learning more broadly defined, and that such learning is necessary for the acquisition of novel linguistic forms. Cultural learning as a basic acquisitional process will be discussed in more detail later (chapters 7 and 8), but for now the important point is that we know very little about the different kinds of situations in which children learn their early verbs and the learning processes that these might imply. In fact, my discussion of the two differences between object label and verb acquisition could be taken to imply that the acquisition of verbs is more difficult than the acquisition of nouns. But I take it as a fact, as argued at the beginning of this chapter, that children learn words of both types early in development and without special efforts. This merely underscores our ignorance in these matters and sets a challenge for theories of lexical acquisition. In any case, a major goal of this study will be to make an inventory of the communicative situations in which my daughter learned her early verbs, and in this way to take a first step toward making the social-pragmatic theory more explicit in the case of verbs.

The overall point is that the acquisition of verbs is different from the acquisition of nouns in two important ways. First, the concepts underlying early verbs are not static and permanent but dynamic and transient. They are events that may be construed either as actions or as changes of state. Second, children do not always learn their early verbs by mapping them onto ongoing events in their perceptual world ostensibly (as is often the case with the acquisition of object labels). Rather, they use

social–pragmatic cues and abilities of cultural learning to determine the adult’s intended reference in various ways in a variety of communicative contexts. In both of these ways, then, verbs require an approach that is different from the approach usually employed in the study of concrete nouns, whose study has dominated the theoretical agenda. Ultimately, of course, a comprehensive theory of lexical acquisition should explain with a common set of principles the cognitive structures and the learning processes involved in the acquisition of all types of words.

2.2. Children’s first sentences

Not long after producing their first words, many children also begin to produce word combinations. The approaches to children’s early combinatorial speech that have emphasized abstract adultlike structures, either syntactic or semantic, have been adequately criticized by researchers such as Braine (1976), Bowerman (1973), Howe (1976), and Edwards (1978). In essence, these critics argue that we have no evidence that children operate with adultlike categories or rules in formulating their early sentences, and thus we should not posit them.

One of the reasons that we do not have to posit abstract structures is that work in theoretical linguistics is doing away with many of these in adult analyses. Much recent work has focused on how powerful are linguistic structures based on individual lexical items, especially verbs (e.g., Bresnan, 1982; MacWhinney, 1987). Whereas it is obvious that verbs are not a necessary component of all grammatical structures – children might form relational categories such as *possessive* between two objects – the transition to anything resembling adultlike syntax clearly depends on the child’s acquisition of verbs and their associated argument structures (Bates et al., 1988; Bloom, 1981). I discuss these issues first with regard to the cognitive bases of early syntax, and then with regard to the developmental processes that result in grammatical categories.

2.2.1. Cognitive bases of early syntax

Braine (1976) provides the most ambitious attempt to characterize children’s early grammars without the use of abstract, adultlike structures. He analyzed the earliest word combinations of 11 children, each learning one of five languages. As in his previous theory of pivot grammar (Braine, 1963), he argues that children learn positional patterns – that is, word order patterns – with a special prominence being given to verb-like predicative words. Thus, a child might have a *more + X* formula in which the thing of which more is desired is placed after the word *more*. Other relational words may have either similar positional patterns (e.g.,

play + *X*) or different patterns (e.g., *X* + *stuck*). The question becomes whether there is any higher-order category that might group similar patterns into a single, higher-order pattern (e.g., *pivot* + *X* or *X* + *pivot*). Braine's answer is that in some cases there may be, but we cannot assume it ahead of time, nor can we attribute it to the child based solely on adult categorizations, nor can we anticipate how wide its scope will be. For example, he finds that his son began constructing two-word sentences with *big* and *little* at around the same time. In both cases the positional pattern placed these words in the first position, they expressed similar semantic content, and they each were combined with a variety of object labels. We might thus posit a "size" + *X* pattern to generate both of these types of utterance. *Hot*, *cold*, and *hurt* were learned soon afterward and showed similar positional patterns (all in first position) and were combined with object labels as well. Are we now in a position to posit "property" + *X*? Braine says no because this child had several other property words (e.g., *wet*) that did not show consistent positional patterns. In addition to a pattern based on size, Braine found for other children "limited scope formulae" based on words referring to "oral consumption" (*eat* and *drink*), "the movement of vehicles," and so forth.

Bowerman (1976) gives similar yet different examples from her daughter Eva. For instance, Eva began combining *want* with a variety of object labels and activity words at around 17 months of age (e.g., "Want juice," "Want see"). At that same time she had approximately 25 other verbs in her vocabulary that were only used as single-word utterances (e.g., *push*, *have*), thus indicating that she was not using a general combinatorial rule that applied to all verbs or even to all stative verbs. Along similar lines, a month later, *more* + *X* constructions became frequent while Eva continued to use *again*, *all-gone*, and other semantically similar relational words only as single-word utterances. Bowerman concludes that "each word was treated as a semantic isolate, in the sense that the ability to combine it with other words was not accompanied by a parallel ability to make two-word utterances with semantically related words" (p. 156). This lexically based pattern persisted for about 2½ months, after which Eva proceeded to "a much more mature system in which words of virtually all semantic subtypes were dealt with fluently" (p. 158). In contrast, Bowerman reports that her other child Christy, who began combining words later in development than Eva, seemed to show evidence practically from the beginning of combining whole classes of items in similar ways, for example, all the locative particles *up*, *down*, *on*, *off*, *back* began to be combined in a similar fashion at around the same time.

Both Braine and Bowerman thus conclude that children just beginning to learn language are working at a very concrete level (cf. also Bloom, Lightbown, & Hood, 1975). Some of the child's first word combinations

are based on particular lexical items; abstraction then occurs gradually as she notices semantic and syntactic regularities. Other children, perhaps those who begin combining words after a particular cognitive or linguistic milestone, seem to begin with categorical hypotheses from the beginning. But even in this case they nevertheless begin with what may still be characterized as "limited scope formulae" rather than abstract, adultlike rules.

There are two classes of explanation for the limited scope formulas observed by Braine and Bowerman. The first explanation is the one preferred by Braine, namely, that children are basing the scope of their early formulas on personally constructed semantic categories such as size, oral consumption, and the like. They may then generalize more broadly to wider semantically based categories or even, at some point, to categories based on syntactic criteria. The second explanation is that children's early word combinations are not formulas that apply across lexical items at all. Children learn individually the relational words and verbs used by adults. They produce combinations with each one that reproduces the ordering they hear in what the adults say (Bowerman, 1973; de Villiers, 1985). Because adults use a consistent ordering across verbs, children end up doing this too, but not because they are applying formulas; they are simply mimicking adults or, perhaps, using pragmatic strategies based on topic-focus distinctions and the like (Greenfield, Reilly, Campbell, & Baker, 1985).

Even more skeptically, I would argue that word order can only be considered a syntactic device when it is used contrastively. If a child uses only one order in association with a given verb, or either of two orders such as "Hat off" and "Off hat" to mean the same thing, then the ordering does not make a functional difference and it is not a syntactic device actively controlled by the child. This same principle holds for other syntactic devices as well, of course, so that children using words with accusative markers or specific intonational patterns may only be said to be using a syntactic device if that marker or pattern can be contrasted with its absence (or some other marker or pattern) to create a different meaning. The word-order preferences (or formulas or patterns) characteristic of the children studied by Braine and Bowerman thus should not be considered syntactic at all. In many cases the consistent orderings we observe (e.g., *more* + *X*) are simply the child's adopting the word order she has heard in adult language. There may be other reasons for the child's ordering preferences, but the important point is that they are preferences only, and a preference (or any other pattern we observe that the child does not actively control) is not a functionally significant symbolic device.²

² Interestingly, many children learning English do learn at a fairly early age to indicate

It is thus important to distinguish children's early word combinations from their early sentences. Word combinations are multiword productions in which children produce two or more of their words in combination. They are clearly attempting to construct more complex meanings in this way. The child who says "Milk table" may indeed be intending to indicate the locative relation between the two objects, and the child who says "More milk" may be intending to indicate that she would like more milk. The child's intended meaning is reconstructed by the adult using the utterance and situational context to produce a "rich interpretation." But what the child has yet not accomplished in such word combinations is the expression of her intended meaning using the adult English conventions for indicating the relations among words. These early productions are thus word combinations – cognitively complex and creative – but they are not yet sentences employing productive syntactic devices.

There are really two issues in all of this. The first is the question of when the child begins actively to control syntactic devices such as word order and morphological markers to provide "assembly instructions" for how the contentive lexical items are to be interrelated to form a composite whole. The evidence for when this might occur is in many cases a difficult issue, but in principle the idea is that the child has now learned a new type of symbolic instrument that might be called second-order symbols, because they operate on first-order contentive symbols. The second issue is how widely these second-order symbolic instruments (syntactic devices) apply. That is to say, the child might learn a productive word-order device for sentences with the verb *throw*, but it is another question whether this device will generalize to any other verb or sentence types. Based on Braine and Bowerman's analyses, I believe that we should proceed under the assumption that in the beginning syntactic devices are lexically specific (i.e., used for only some lexical items, e.g., the name of the one doing the hitting should be said before the word *hit*) and only later are linguistically decontextualized to other predicate terms (resulting in, e.g., agent).

I call this the Verb Island hypothesis. It can be stated more specifically as follows: Until proved otherwise, we should assume that young children's early verbs and relational terms are individual islands of organization in an otherwise unorganized grammatical system. In the early stages the child learns about arguments and syntactic marking on a verb-by-verb basis, and ordering patterns and morphological markers learned for one verb do not immediately generalize to other verbs. The reason

a possessive relation by the use of a special prosodic contour (e.g., *Mommy sock*). If this is in contrast to the same combination without stress, for something other than possession, then this may be considered a productive syntactic device even though it is not necessarily a part of adult English.

for this is that nascent language learners do not have any adultlike syntactic categories or rules, nor do they have any kind of word class of verbs that would support generalizations across verbs. Processes of symbolic integration that serve to create sentences from words operate on a verb-specific basis as well. What children have at this stage are a knowledge of specific kinds of events, and words to indicate them (verbs), and a knowledge of the roles played by various entities in these specific events, along with syntactic devices to indicate these.

2.2.2. *Early syntactic development*

The Verb Island hypothesis is my way of stating that learning to use verbs in meaningful ways provides the major stepping-stone for the child's transition from single word to grammatical speech. The hypothesis has the further virtue of explicitly denying the existence of abstract categories and rules in early child grammars. Children do come to have more abstract syntagmatic and paradigmatic categories as they develop, however.

Syntagmatic categories, in my interpretation (relying heavily on Nelson, 1982, 1985), are categories often referred to by such terms as *agent*, *patient*, *instrument*, and so forth. These are inherently relational categories that indicate how an object (or something treated as an object) is related to an action or process (or in some cases to another object). In the Verb Island hypothesis, these begin on a verb-specific basis, with such things as *hitter*, *thing hit*, *thing hit with*, and so forth. And though restricted to this one action, these *are* categories: Many different objects can be a thing hit. Children learn these with their general capacities for cultural learning – when adults order words in this way this is meant, in that way that is meant. But at some point they notice regularities across verbs. These regularities are based on the fact that the same syntactic device is used to mark various verb-specific categories across different verbs in adult speech. Thus, in a case-marking language the child might notice that in adult speech such things as *hitter*, *fixer*, and *runner* are all marked with the same morphological marker. In addition, the child's developing notions of causality allow her to recognize that a *hitter* and a *fixer* and a *runner* have something in common that may justify adults' treating them similarly: They all initiate an action (they are agents or actors). The process of forming syntagmatic categories is thus the same categorization process that we see in other domains, including lexical development. In this case, a second-order symbolic device such as morphological marker provides the form that invites the child to construct a category. What results should thus show prototype effects and all of the other major characteristics of lexical and other cognitive cat-

egories – which they do (see Taylor, 1989, and the papers in Corrigan et al., 1989).

(It is important to emphasize that in a very important sense verb-specific syntagmatic categories are still a part of adult language; on the cognitive level individual verbs involve individual syntagmatic relations [Bolinger, 1977]. The sentence “John mibbed the chair” does not tell us whether, as a result of John’s behavior, there was a change of state in the chair [“He destroyed it”], no change of state in the chair [“He admired it”], or even whether it was in existence or not before the mibbing [“He made it”]. Even with our adult knowledge and categories the fact that *John* is an actor and *chair* is a object, as indicated by their positions relative to the verb, only gives us a vague causal arrow pointing from one to the other [cf. Clark & Carpenter, 1989, on “source” as the common spatial basis for both agents and causes]. Only knowledge of the specific conceptual situation represented by *mib* supplies the specific syntagmatic relations intended.)

Word order as a syntactic device presents some problems for the formation of syntagmatic categories. The problem is what constitutes the symbolic device that is similar between “Daddy hit” and “Daddy fix” that would lead to a generalization such as agent or actor. It could be that in both cases *Daddy* is the first word of the utterance, but this would lead to many problems in cases in which something other than the agent is in the utterance-initial position. It seems that some structural–functional analysis must be involved so that the child may identify the syntactic device as something such as “before the verb.” This requires something like a word class of verb (or perhaps something more limited) so that the child may equate the ordering patterns across different utterance types. This leads us to paradigmatic classes.

If syntagmatic categories in the case of verb-argument structure are concerned with relational “slots” that verbs carry with them (e.g., the agent slot, the patient slot), paradigmatic classes are concerned with what types of things may fill these slots – what types of lexical items (e.g., nouns, adjectives) and what types of larger phrasal structures (e.g., noun phrase). *Verb* itself is also a paradigmatic word class. The problem with paradigmatic word classes is that they are not functionally operative in the linguistic system in the same way that syntagmatic categories are; they do not participate as significant symbolic devices in verb-argument structure. This means that a paradigmatic class is *not* associated with a single, functionally operative symbol (syntactic device) that consistently marks the class, as syntagmatic categories are. There are morphological attachments that are often associated with particular paradigmatic classes (e.g., tense markers with verbs, articles with nouns), but these serve their own functions (e.g., to indicate past tense, to indicate definite or indef-

inite reference); they do not mark the basic grammatical function of the word to which they are attached as do case markers and basic word-order devices.

There are two classic views of how paradigmatic classes are formed, one relying on semantic factors and one relying on distributional factors. Bates and MacWhinney (1982) propose that children form paradigmatic categories such as noun and verb on the basis of semantic similarities. Thus, prototypical nouns are words for objects and verbs are words for processes. Maratsos (e.g., 1982, 1988), on the other hand, has argued persuasively that any sufficient account of the development of paradigmatic word classes must rely to some extent on distributional analysis. He proposes that the child notices and registers similarities in the way words are combined with other words or morphemes across time, and words that behave similarly combinatorially are members of the same class (e.g., *dog* and *tree* are both preceded by articles, take a plural marker, etc.). Although in some cases semantic considerations may play a role – for example, the child may come to see that many nouns are objects and that may be an aspect of her concept of nouns – Maratsos argues that semantic considerations are not sufficient because linguistic categories do not map onto them in a straightforward manner (many nouns are not objects, e.g.). Of special importance also are cases where semantics cannot possibly be a clue (e.g., masculine and feminine noun classes), for which something like distributional analysis would seem to be a necessity. On the other hand, however, it is also true (as Maratsos, 1990, recognizes) that purely distributional analyses are also not sufficient by themselves because there are systems of case inflection in some languages in which the same form serves several basic functions (e.g., Serbo-Croatian; Slobin, 1982), thus making purely distributional criteria ambiguous. Bates and MacWhinney (1989) have recently suggested, quite reasonably, that both sets of factors are probably at work.

I would like to propose that the formation of paradigmatic word classes requires two steps (the Maratsos and the Bates and MacWhinney proposals concern only the second). This is necessitated by the fact that paradigmatic classes are classes of words, not things. Whereas an agent is a thing in the world (designated by a linguistic symbol), a noun only exists in language. Thus, the first step is that the child must first have some words that are subject to conceptualization and manipulation, that is, words that the child has treated as mental objects (Karmiloff-Smith, 1986). This means operating *on* them with other linguistic structures, especially predicates on arguments. As long as words are only operated *with* – they are predicates doing the operating – there can be no question of word-class formation. This has particular relevance for verbs because even when the child is speaking in short sentences, the verb is still the

main relational structure of the sentence and thus is still something the child is only operating with, not on. Following this reasoning, Ninio (1988) has proposed that children learning English should begin forming a word class of nouns quite early, because they are used as arguments of predicates quite early. Forming a word class of verbs should occur only later because verbs are not typically in the argument slots of other verbs until later. Children should not have a word class of verbs until they are treated as arguments by other predicates in, for example, sentences of the "I want to play" variety.³

In my opinion, two modifications of Ninio's hypothesis, one of which was hinted at by Ninio herself (1988), are required for this first step. First, it is not just verbs that may serve as predicates that treat other predicates as mental objects. As Ninio hints in some of her examples, of special importance are modal operators such as those in "Not bite it anymore," "I can't open it," "I won't swallow it." This point is important because some agglutinative languages such as Turkish and Tamil have elaborate verb morphologies that are used productively (indicating a word class of verb) quite early, before children would have used extensively sentences with two verbs. And many of the morphological markers in these two languages are indeed predicative in this sense that they are modal operators (and not just, e.g., tense markers). It is also possible that *wh*-question words may serve the same function in some cases (e.g., "What you making?").

A second modification of Ninio's hypothesis is an attention to comprehension. Undoubtedly, if the child produces predicates embedded as arguments in larger relational structures, she is acting on them as mental objects. But something similar must be going on when the child comprehends such a structure. Comprehending what the adult means by saying "I can't find it" or "I want to go" requires that the child determine the relationship between the two predicates – that is, in these two sentences, that *can't* and *want* are operating on *find* and *go* respectively. Note that comprehension does *not* mean simply that the child is exposed to such sentences or has them addressed to her. It means that she has performed the mental act of comprehending them in something like the adult manner, which means that the child has control of the key elements of the utterance and their interrelations.

Once the child has a group of words that have been treated as mental objects, the stage is set for the second step in the process of paradigmatic

³ This is actually a slightly slanted reading of Ninio's claim. Her claim is specifically about "hierarchical" predicate-argument structures, which she believes can be realized in sentences with a verb and two arguments, such as *X hit Y*. Her interpretation is that this implies a structure of the form *X [hit Y]*. My claim is that the verb itself must be placed in an argument slot before a truly hierarchical structure can be inferred.

word-class formation. Following Bates and MacWhinney (1989), it is likely that both form and function are important cues used in the categorization process. I would like to hypothesize the developmental priority of function; however, that function does not just mean the referent of terms, as it does in most accounts – that verbs refer to actions, for instance. It means more importantly *how the words function in the child's linguistic system*, what they do in the process of constructing complex symbolic structures. This means especially the role they play in verb-argument structure – for example, nouns are words that serve to fill all types of argument slots and verbs provide the main relational structures of sentences. Once basic categories have begun forming in this way, they may then be identified on the basis of simple surface-level distributional form cues (e.g., hearing “mibbing” means that *mib* is a verb). The analogy with Nelson's theory of concept formation is not accidental. Just as the child forms categories of objects and actions on the basis of how they function in larger event structures on the conceptual level (Nelson, 1985), on the linguistic level the child forms paradigmatic classes of words on the basis of how they function in sentences – a kind of functionally based distributional analysis.

My overall hypothesis, then, is that the child has no syntagmatic categories at all when she is just showing a word-order preference or a morphological marker that is not contrastive. The first syntagmatic categories are verb-specific and based on the child's abstraction that in “Boy hit” and “Girl hit” the word before *hit* is the hitter (the Verb Island hypothesis). More general syntagmatic categories await either the child's active use of a morphological marker across verbs, or the formation of the paradigmatic category of verb (or perhaps something more limited) to help identify the invariant in word-order patterns across verbs. This latter outcome can only occur when different verbs have been produced or understood as items operated upon, that is, only after they have been the objects of another predicate of some sort, including both other verbs and some currently unspecified set of modal operators. The main predictions that this account generates in the case of English are: that the child should form a word class of nouns earlier than that of verbs (if we assume that nouns are objects in argument slots earlier than verbs developmentally); that the formation of a word class of verbs will await their placement in argument slots of one form or another; and that verb-general word-order syntactic devices await the formation of the word-class verb.

Much of the subsequent grammatical development of children may be seen as the acquisition of more and more adultlike ways for marking argument slots (syntagmatics) and for filling these slots with ever more complex linguistic material such as noun phrases, complement clauses,

and even entire sentences (paradigmatics). This paves the way for the productive extension of known structures to new linguistic material as documented by, for example, Pinker and his colleagues (summarized in Pinker, 1989). Other grammatical developments concern more elaborate noun and verb morphologies and the construction of complex sentences such as questions, negatives, and passives, which, in English at least, have some special properties. In the current view, none of these require anything other than the basic cognitive processes involved in the learning and development of verb-argument structures. I hope to make this at least a plausible hypothesis after the current data have been presented.

2.3. Goals and hypotheses of the study

The developmental approach I follow in this study dictates that an attempt be made to describe the child's language as nearly as possible in its own terms. This approach entails four basically negative assumptions: I do not assume that the child is using a word symbolically until she uses it in a decontextualized (representational) manner; I do not assume that the child's verb means the same thing as an adult's, but rather that it is only capable of indicating those aspects of a situation that are allowed by a relatively explicit cognitive–developmental theory based on objects and actions, and their spatial, temporal, and causal relations; I do not assume that the child is using a syntactic device until she demonstrates a contrastive use of that device; and I do not assume that a syntactic device applies generally across all lexical items until there is evidence for this in patterns of the child's linguistic productions.

With these considerations in mind, I have four specific goals for the current study. Two concern discovering more about verbs as lexical items and two concern verbs as the organizational elements in early child grammar. My specific goals are:

1. To provide an inventory of the cognitive structures underlying the totality of one child's early use of verbs (chapters 4 and 5, summarized in chapter 7).
2. To provide a list of the social–pragmatic contexts within which this child learned her early verbs (chapters 4 and 5, summarized in chapter 7).
3. To test the Verb Island hypothesis that this child's early syntagmatic categories were initially verb specific (chapters 6 and 8).
4. To test Ninio's hypothesis that paradigmatic word classes (especially noun and verb) emerge from a process of functionally based distributional analysis (chapter 8).

To repeat an earlier-stated and more general goal, the hope is that by addressing these specific goals and hypotheses I can provide an account of the early acquisition of language that allows us to relate it more closely to other areas of the child's cognitive and social–cognitive development.

3

Methods and an introduction to T's language

The diary method has a long and venerable history in the study of child language acquisition. From a modern point of view, the problem with the classic diary studies (e.g., Leopold, 1949; Stern & Stern, 1928) is that they attempted to be atheoretical and to describe everything at once. Modern diary studies are more explicit in their theoretical assumptions and tend to focus more narrowly on specific issues of current interest in the field. For example, in studies of their children Dromi (1987) and Mervis (1987) each focused on a specific set of issues in early lexical development, Bowerman (e.g., 1976, 1982) concentrated on her children's "productive errors" of syntax and morphology, and Halliday (1975) cataloged the functional categories into which his child's early language fell. The contributions made by these important studies are proof enough that diary studies have an important role to play, even in the age of video and computer technologies (cf. also Fletcher, 1985). The reason – which is so obvious I will not belabor the point – is that having a relatively complete record for a single child's language allows us to ask important questions that periodic records from a larger population simply do not permit (Mervis, Mervis, Johnson, & Bertrand, in press).

3.1 The diary

The subject of the study was my daughter Travis (T). My wife and I kept a diary from T's first stable words at around her first birthday until her second birthday (January 1974 to January 1975). Overall, we were observing and recording her almost all of her waking hours during this time: She was seldom with a baby-sitter, and there was a minimal number of times when we were too distracted to observe properly (e.g., when guests were present). In general, my wife observed weekday mornings, I observed weekday afternoons, and we shared the task on the weekends. We kept the main diary in the house (on a high table) and carried with us a note pad when we left the house. Any notes taken away from the

house were transferred to the main diary in the evening of the day they were recorded.

In recognition of the fact that recording everything a child utters is an impossible task, we focused from the outset on nonnominal expressions and all word combinations. Thus, T's use of holophrastic object labels was not systematically recorded at any time during the study (we did compile one early list that will be presented later). Upon the emergence of the first nonnominal expression (at around 14 months of age), the following procedure was observed. For each nonnominal expression, the first spontaneous (nonimitative) use was recorded along with its situational context. For the early words, an attempt was made at this point to determine the adult-child interaction (i.e., the adult linguistic model and context of use) that gave rise to the learning of the word; this later became problematic, and was discontinued. All subsequent uses of the expression were recorded except that the "same" expression in the "same" context was not recorded after its first occurrence (e.g., telling Daddy "Bye-bye" as the car left each morning). If there was any question about the novelty of use, the utterance was recorded. All word combinations, including those containing only object labels (e.g. "Book table"), were recorded, again excepting repeated instances of routinized usage (e.g., "Bye-bye Daddy" as the car left each morning).

From 17 to 20 months, at the beginning of each month, T was video- and audio-taped playing with her mother or with me. The hour-long video recordings were conducted at the Department of Psychology at the University of Georgia, and T usually interacted dyadically for one-half hour with her mother (while I filmed) and for one half-hour with me (while her mother filmed). The hour-long audio recordings were conducted at home and represented in most cases dyadic interaction between T and me. Both types of recording were transcribed immediately by me (I was present at all recordings), on the same day that they were made.¹ In addition, at these same monthly intervals, T's mother and I perused the previous month's diary and made a list of each nonnominal expression and our intuitions about its use during that time; we often made notes on parental usage of particular words at that time as well.

At T's 20th month, a decision was made to focus more on the "emergent structure" (Braunwald, 1979) of T's word combinations with verbs,

¹ The video transcriptions I made at the time focused on T's language, with adult language transcribed only where it was necessary for understanding what T was doing or saying; that is how I was able to do them in the same day. The videotapes have since been retranscribed by a team of research assistants, with more careful attention to the adult's language. The original transcriptions by me were of immense help, however, in deciphering T's language as I was there at the time and thus counted as unintelligible almost nothing.

that is, on those combinations that seemed to represent her most sophisticated linguistic skills. Thus, from the 20th month, we began ignoring sentences that showed a well-established verb combination pattern, even if it may have contained a new object label. For example, after 20 months an utterance such as “Hit truck” would not have been recorded if T had previously shown many patterns with *hit* + X, and if she was simultaneously using more complex sentences with the verb *hit* (i.e., two-word combinations were not on the cutting edge of her competence with *hit*). For T’s more complex sentences at any given time, all new instances were included. Thus, “Danny hit me tennis-racket” (on the same day as “Hit truck,” e.g.) would have been recorded even if she had previously produced *X hit me Y* patterns because this was a sentence on the cutting edge of her competence. Obviously, these criteria could not be applied in ongoing interactions as systematically as one might wish, but in practice we recorded during this final 4 months all of the instances of T’s newest and most interesting sentences – which, given our almost total knowledge of her past language, really did stand out fairly clearly. When there was any doubt, the utterance was recorded. Near the end of this period (at 23 months) a final video recording was made and transcribed in the usual way (except that it took me several days). Monthly summaries were made throughout this period, but because T’s language was at this point too complex and diverse for us to know all parts of it intimately, they were not nearly as complete or accurate as the earlier summaries (we were so uncertain of our knowledge of parental models at this time that they were discontinued). To summarize the boundaries of the diary:

1. No object naming was included.
2. No repeated utterances of routinized words or phrases were included.
3. After the 20th month, utterances that were instances of well-established patterns of “immature” uses for particular verbs were not included.

For purposes of the current study, all diary entries of verbs and word combinations (which included the utterance along with its date and context of use) were typed into a computer file by a research assistant, and checked for accuracy by a second assistant (and myself if there were any questions). The KWAL (Key Word And Line) program from the CHILDES system (MacWhinney & Snow, 1990) was used to extract and collate all of the utterances containing previously identified verbs and predicates (identified from the monthly summaries). After this was done, the remaining entries were examined for other utterances containing verbs or predicates; these were collated in the same way. A final residue were sentences containing no verbs and they were collated in various ways (to be reported in chapter 6). The appendix contains all of the

diary entries organized, for the most part, around the main verb or predicate of the sentence. Notes about single-word usage or parental usage, mostly from the monthly summaries, are included where they are available and useful for current purposes.

3.2. Determining meaning

The data for the current analysis are, quite obviously, the utterances T produced and the contexts in which she produced them. But because my emphasis is on the meaning of utterances and words – as I determine them through an analysis of T's apparent motives in particular situational contexts – issues of “rich interpretation” arise as well. Although there is no perfect solution to the problem of “radical translation,” I believe there are several things that help.

The first, as argued previously, is some form of cognitive–developmental theory to help us reconstruct the child's point of view from our point of view as we examine the contexts in which she used a particular word. For example, at around her second birthday, T learned from a cartoon detective show on television the word *clue*. She used it on several occasions when she found something like a feather on the sidewalk, a comb under the dresser, and so forth. It is obvious that we cannot assign to her anything like the adult meaning of the word *clue* in these instances because she shows no other indication of understanding a mystery and how a clue fits into that context. To cite just one other example (this time from the data to be analyzed), when T wanted to enter the study when I was working, her mother would tell her that she could not because “Daddy is working.” T learned to say that she or others were “working” when they were at a desk, or using paper and pencil. In both of these cases, most adults would attribute to the child some “reduced” form of the adult meaning focusing on sensory–motor aspects of the physical objects involved and so forth. As discussed in the previous chapter in connection with semantic analyses in general, the only way to perform such reductions in a principled way is to have a theory of the child's cognitive development. I will outline the fairly simple theory I am using in the section that follows.

A second consideration is contexts of use. This means paying close attention to how the child uses an expression – in what contexts and for what purposes. In addition, however, is a consideration explicated most clearly by an example from Edwards (1978). Edwards's daughter used the word *pull* on several occasions as she was pulling at items that were stuck: a closed door, a purse with a difficult snap, and so forth. If these uses happened in a taping session, and were our only source of information, we would likely attribute to this child something close to the

adult meaning of *pull*. However, further observations revealed that this child never used the word *pull* when she was pulling on things that did not thwart her, that is, when she was opening doors, pulling toys, and so forth. She thus apparently meant by this term something closer to our word *stuck*. Edwards (1978, p. 67) observes that in many analyses

the nature of the situational context of any single utterance is assumed to be uncontroversial and determinant, so that the problem of deciding what particular aspects of the context, as perceived by the child, are crucial to the child's intended meaning, is ignored. What can easily happen in the analysis of child language is that the child's words are interpreted in terms of the observer's own semantic system, and this is then checked against the immediate situational context for confirmation.

The point for current purposes is that if we want something resembling the child's meaning as she represents it to herself, we must use our cognitive–developmental theory of the child's world in conjunction with a sensitive analysis of all of the contexts in which she uses the term along with, in some cases at least, those contexts in which the child does not use the term.

Another consideration is related to this point. I believe that a close examination of the child's alternative means of expression (another way of determining where a given expression does not apply) is often very important (cf. MacWhinney, 1989, on competition between lexical forms). For example, if a child often requests of adults that they *give* things to her – always in a context where the child wants but cannot independently obtain an object – there are many different ways that we might represent what aspects of this situation are salient for the child: Is it crucial that the adult “causes” the transfer (as in the adult *give*) or just that the child obtains the object in some way? We may be aided considerably in this determination if we know what other possibilities are at the child's disposal. Thus, at one point T distinguished cases where she just wanted to “Have it” from those cases where she wanted an adult to “Give it,” thus indicating, presumably, the precise causal difference in question.

One final issue must be considered. When we choose to attempt a formal representation of a language form from a child's grammar, we almost always mean to represent something relatively stable. This is determined by examining contexts of use over time, for example, determining that the child uses *more* with food by examining each individual context and discovering that each of these instances involves food. But this procedure can never, in my view, be systematized into a set of clear and consistent procedural rules because there are times that the child changes her use of particular forms abruptly, and we do not want to sum across this change. For example, if the child one day uses *more* for

a nonfood object, we are presented with a dilemma. On the one hand, we might assume that the child had the wider meaning throughout the previous weeks but we did not observe its use for objects other than food because she simply was not motivated or did not have the opportunity to use it in nonfood situations. On the other hand, of course, we can assume that the meaning has changed. We cannot reasonably ask for precision in these matters, but must rely on gross indications of meaning change, namely, fairly dramatic changes in contexts of use on several occasions during the same time period. Until there are such changes, our meaning representations must take as data all previous uses of the term since the last meaning change.

To summarize, then, attributing meaning to child utterances and words begins with a rich interpretation of the child's meaning in context. This should be guided by a relatively explicit theory of what aspects of the situations are conceivable and salient for the child. In general, it is advisable to assume the least-specific intended meaning on the part of the child given the alternative means at her disposal. For example, we should not assume that *give* includes as part of its meaning an agent if it is the only term she has for such situations; when she acquires linguistic means for a differentiating situation then we may attribute more specific semantic structures. When attempting to specify the meaning of a symbolic form over time, a full analysis of both that word's use over time (a horizontal specification across a time line) and the alternative means of expression at each of those times (a vertical specification at a single time) is required. Only by taking into account all of these considerations may we begin to determine the meaning of particular pieces of language from something resembling the child's point of view.

3.3. Semantic analysis of verbs

Given these considerations about how to determine child meanings, I proceeded in my semantic analysis of T's verbs as follows. The first task was to identify the verbs. As mentioned previously, I used a very liberal criterion: any word whose conceptualization was a process and whose use was as a predicate. This led to the inclusion of many so-called relational words such as *more* and *bye-bye*. Although this may seem odd to some, I must report that upon deep reflection I was unable to say how, for T, the request for *more* or *off* was any different than the request to *go* or *move*. There is thus a sense in which what I am reporting on is all nonnominals that were not clearly nonprocessual property words such as *pretty* or *hot*.

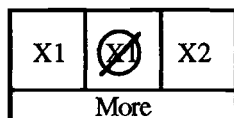
I began with the output of the KWAL program for each verb – that is, all of its uses and the date and context of use for each. I grouped

them, roughly, into related groups of words based on the categories of early semantic relations identified by other researchers (e.g., Brown, 1973; Bloom, 1973) and my previous unpublished analyses (Tomasello, 1977, 1980). I began with the categories: (1) presence, absence, and recurrence; (2) locatives; (3) possessives; (4) attributives; and (5) other activities. For the first three of these categories involving changes of state, I first attempted, through an examination of contexts of use, to represent formally each of the words within each of these groups at each of the monthly taping intervals. I then looked at each word more carefully over time and adjusted the representations more finely to reflect both horizontal (intraword over time) and vertical (interword at the same time) considerations. In all cases the attempt was to keep each word as unspecific as possible given the contexts of use and the alternative means at T's disposal. I cannot say that any of this was done in anything but an intuitive manner.

As a result of these analyses, I ended up with six groups of change of state words that were submitted to formal analysis: presence-absence-recurrence of objects (e.g., *more*, *gone*), presence-absence-recurrence of activities (e.g., *again*, *finished*), exchange-possession of objects (e.g., *give*, *share*), location of objects (e.g., *on*, *under*), movement of objects (e.g., *bring*, *stuck*), and states of objects (e.g., *break*, *fix*). There were two groups of words for activities that were not formally analyzed: activities involving objects (e.g., *hammer*, *wash*) and activities not involving objects (e.g., *jump*, *see*). In the case of these activity words, and in the case of property words (attributives), semantic analysis was confined to noting any cases where there were deviations from adult usage.

In doing the formal analyses, I was guided throughout by the very general but nonetheless constraining cognitive-developmental framework outlined in Tomasello (1980), which depended heavily on Piaget's (1954) framework of objects and their spatial, temporal, and causal relations. Very simply, I assumed that T lived in a sensory-motor world of objects and their spatial, temporal, and causal relations. Also, she may be assumed to know a good bit about other persons and how they work; this will come into play as a part of the learning processes involved and in the semantic representations of some verbs involving intentional actions and/or mental states. In the framework of Langacker's (1987) image-schematic diagrams (which I discovered after my initial analyses, for which I had been using the very similar methods of von Glasersfeld, 1972), I laid out the states in the temporal sequence that together made up the change of state. In any one panel, representing one "moment of attention," only a static state was represented; the change of state was represented by the observer's "reading" the diagram as a whole across panels. Thus, for example, T's use of *more* to indicate the recurrence of

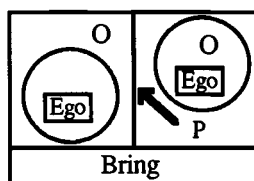
some experiential entity (e.g., more food being brought to her, more music being played, etc.) was represented as (with *X1* being an item and *X2* being a new instantiation of an item of the same type – for example, the food or music that recurs is of the same type, but it is not the food she finished that is in her stomach or the song that is over):



The elements of the diagrams were in all cases some subset of:

1. Temporal relations in the form of the represented “moments of attention” in the panels.
2. Objects and classes or groups of objects (e.g. *food* or *people*) that remained the same objects, but changed states, across moments of attention (e.g., the food that was here is now gone).
3. Perceptually available locations and spatial relations involving such basic things as: presence or absence in the perceptual field; movement toward or away, up or down, on or off, and in or out.
4. Causal relations involving one entity causing a change in relations from one moment to a succeeding moment (this includes notions of human agency).

It would be very cumbersome at this point to attempt to specify in advance all of the details of the application of this method to the data. I will introduce these specifics as they are needed for the particular analyses. But just to give some indication of the possible complexities involved, a word that contains as many of these elements as any is *bring*. The diagram below indicates that at Step 1 an object *o* is outside the sphere of interaction (the circle) of the speaker (*Ego*), and at Step 2 someone else (*P*) causes that object to come within her sphere (as in “*P* brings it to me”).



Complications such as these can, in theory, be multiplied up to highly complex examples such as the verb *to democratize*. Langacker (1987) and von Glasersfeld (1972) believe that, in principle, such diagrams can be constructed for all words, although all of the complexities involved may in many cases remain implicit. Thus, *democratize* presumably must be represented by an initial state in which certain complex relations among

citizens and their government (itself a complex concept) hold and a succeeding state in which another set of complex relations holds among those same entities. However, we may hypothesize that human cognition works in such a way that *democratize* is simply represented as a moment with “no democracy” followed by one with “democracy,” with all of the complexities being in the internal structure of this abstract concept, which may be accessed as needed (see Bates, 1976). Another complication is highly abstract or mental state verbs such as *know*, *believe*, and *deserve*, which would seem to require a very different set of abstract conceptual elements. But the assumption is that these may be analyzed into simpler elements as well, in many cases in terms of more concrete sensory–motor concepts (Lakoff, 1987; Lakoff & Johnson, 1980).

It is important to note at the outset that the representations I will propose do not for the most part incorporate the pragmatics of how these semantic structures are used. Thus, for example, I represent *bye-bye* in terms of an object disappearing, but the salutary function of that utterance is *not* represented. What is represented is the conceptual situation underlying use of the word. In general, I would argue that pragmatic intentions must be represented in some other way than the conceptual situations I am attempting to depict. Nevertheless, I will employ a very simple method for representing one and only one pragmatic distinction, and that is because in the child’s early language many words are used for this one pragmatic function, namely to request. Requests involve a different conceptualization than commenting on a state or naming an object because they request a state or object that is not currently realized to become realized in the child’s perceptual field. In any case, I will introduce this and a few other minor variations on the method as they are needed in the analyses.

In chapter 4 I provide formal analyses of the meanings of all of T’s change of state words in terms of the temporal sequencing of states involved, as briefly described here. In chapter 5 I provide English descriptions of the meanings of all of T’s activity words.

3.4. Syntactic analysis of sentences

For each verb, using the same computer printouts described previously, I classified each word combination and sentence for a given verb according to the argument structures involved. Word combinations and sentences involving the same argument types designated in the same way with syntactic devices were classified as the same sentence type – *on a verb by verb basis*. Thus, “Put hat on these feet” and “Put that in the box” were considered the same sentence type because they both contained a specification of the thing being put and the place where it was

put, the former being designated by its positioning immediately after the verb and the latter being indicated (in the postverbal position) with a locative preposition. The fact that the articles used in the two sentences were different and that one used a pronoun to designate the thing being put were not parts of this classification (the use of articles and pronouns were subjects of other analyses; see chapter 6).

The outcome of this analysis was a developmental chart for each verb noting the age at which each sentence type emerged and the number of that type during the period of study (with representative examples being given for the different developmental periods). These are presented in table form for each of T's verbs, with verbs in the same semantic group being presented together in the same table. Also noted in each case is the complexity of the material that may go into a particular argument slot (e.g., for the "_____ stuck" sentence frame, "Big rock" is the most complex linguistic material to fill that slot).

Two problems with this methodology must be noted. The first is how to designate the arguments. On the Verb Island hypothesis, the child does not have any abstract argument categories such as agent and instrument, but must construct these. Before the child has constructed verb-general argument categories, therefore, each verb has its own argument types. However, I can find no alternative that is not exceedingly awkward to using verb-general terms of some sort in the tables – terminology such as *the one who sweeps* and *the thing swept with* becomes very tiresome and difficult to work with. The compromise I have chosen is to use the terms *actor* and *object* in as wide a sense as possible. Thus *actor* includes what have been called agents and experiencers, and perhaps a few that do not fit either of these so well; and *object* includes patients, results, and also themes. I also use the terms *instrumental*, *locative*, and *recipient* throughout the study. In the text I try to use more verb-specific terminology such as *giver*, *given*, *thing given with*, and so forth, where it is accurate and appropriate.

The second problem is deciding when an argument is marked at all. In principle, as stated previously, a syntactic device is only considered operative in the current study when the child uses it contrastively, that is, its presence or absence affects the meaning of the utterance for the child. But word order, the most important device in English, presents difficulties. Early in development there are certain positional preferences. The child may use, for example, *hit* + X constructions when describing an act of hitting; the agent is not expressed. If this is her only construction, then it is not a contrastive use of word order. On the other hand sentences such as *Pete hit Daddy* would seem to indicate that the child knows how to mark the hitter and the hittee with English word-order conventions, especially if both *Pete* and *Daddy* may occur in either

position depending on the circumstance. This is sometimes complicated by the fact that many verbs used by children early in development have animate actors and inanimate objects, for example, *eat* or *read*, and so most object labels occur only in one position, with virtually no chance of being in the other. In the current study, I consider that a given verb has contrastive word-order conventions associated with it when it is used in sentences in which both argument slots are filled appropriately.

Two further difficulties occur with this procedure. On some occasions it comes to pass that the child is using two-term sentences and produces some with the actor position filled and some with the object position filled – for example, *Daddy hit* and *Hit ball*. I assume that these do not have contrastive use of word order unless a single object label is used in both slots on some occasions within the same developmental period (e.g. “Daddy hit” and “Hit Daddy”). The other problem is that intransitive verbs have only one slot, for example, *Mommy sleep*. In these cases, I assume nothing about their structure and only assign them the appropriate conventions when it is demonstrated that general ordering rules apply across the board to other verbs. These same general principles apply, of course, to the other types of marking. Intonational variations will only be assigned status as syntactic conventions if they are used contrastively: For example, with emphasis on Mommy, *Mommy sock* is possessive, but without special emphasis, *Mommy sock* is not. Similarly, if a preposition or other lexical marker is used in only one of a few linguistic contexts, it is not considered productive: For example, T’s *piece-of-ice* and, later, *piece-of* + X constructions are not evidence that the lexical item *of* is functioning as a syntactic marker of any sort.

The semantics and syntax of sentences with verbs are thus the focus of this study and indeed, I believe, of T’s grammar. A number of linguistic phenomena in the diary, however, were not of this type. After chapters 4 and 5 consider verbs, therefore, I present some further grammatical analyses: sentences without verbs, noun and verb-related morphemes, and complex sentences such as negatives and questions. It will be seen that the description and explanation of these do not require any formal or other type of apparatus beyond general cognitive and social-cognitive abilities, in combination with the semantics of verbs and their associated syntagmatic and paradigmatic categories.

3.5. T’s earliest language

T began talking at around her first birthday. She first used object labels, both as requests and as comments or attention getters. During a period of a few days around 17 months, we made a list of the object labels T knew at that time (note that these are taken from a parental self-

Table 3.1. T's object labels at 17 months of age (from parent self-interview)

<i>Names of persons and pets</i>			
Mama	Pete	Dave	Beta
Dada	Mino (Cinnamon)	Paul	Dapne
la (Maria)	Pokey	Ex (Lex)	Zoo-zoo
Danny	Dano	Bance (Valerie)	Pooh
<i>Objects labels (animate)</i>			
Bird	Goat	Bug	Lion
Dog	Bear	Bee	Deer
Cat	Cow	Frog	Baby
Mouse	Owl	Monkey	Boy
Duck	Turtle	Bunny	Girl
Zat (horse)	Man		
<i>Object labels (inanimate)</i>			
Ball	Picture	Coat	Coat
Chair	Window	Shirt	Pen
TV	Money	Hat	Pin
Bed	Game	Towel	Tray (ashtray)
Light	Sand	Kite	Box
Clock	Cup	Ciga (cigarette)	Flower
Choo-choo	Plant	Purse	Car
Baby-doll	Door	Penny	Tree
Spoon	Gaba (garbage)	Shelf	Rock
Bowl	Chess	Kegs	Stick
Shoes	Boat	Swim-pool	House
Socks	Pocket	Soap	Berry
Glove	Mirror	Bush	Gaga (nightgown)
Shower	Cycle	Book	Silk (blanket)
Soup (bathing suit)	Plane	Phone	That (all purpose)
<i>Body parts</i>			
Eye	Hair	Teeth	Leg
Ear	Tummy	Beard (chin)	Arm
Nose	Toes	Foot	Cheeks
Mouth	Butt	Finger	Bee-doo (bosom)
<i>Food and drinks</i>			
Bottle	Corn	Bread	Sauce
Co-Coo (cookie)	Corn (ice cream)	Apple	Waffle
Ca-Coo (coffee)	Bacon	Pear	Bagle
Co-Co (coca-cola)	Eggs	Ba-bee-ca (strawberry)	Cheese
Ca-ca (jello)	Warley (water)	Toast	Milk
I (ice)	Salt	Chip	Juice
Patu (french fry)	Beer	Boney (baloney)	KK (ketchup)
Ceel (cereal)	Some (all purpose)		

interview, and some unsystematic diary notes, not systematic diary recordings at the time of T's utterance). They are listed in Table 3.1. Object labels not appearing in sentences were not systematically recorded in any way after this time.

During the 14- to 17-month period, T also learned a number of words

Table 3.2. *T's presymbolic forms at 17 months of age*

<i>Rockin</i>	First used while rocking in the rocking chair, then as a request to do so, and then as a name for the object, i.e., she would point to the chair and say "Rockin" even when she did not want to rock
<i>Tickle</i>	First used to get an adult to repeat tickling her (usually pointing to where she wants to be tickled), and then to name the object that usually tickled her (i.e., to name, not request, her mother's pigtail or a feather)
<i>Phone</i>	First used in response to hearing the telephone ring, then as she "talked" on the phone, then to point at and name the phone, and then when she wanted someone to pick her up so she could talk on the wall-phone (pointing to it)
<i>Play-play</i>	First as an accompaniment to her "playing" the piano, then to name the piano
<i>Towel</i>	First as an accompaniment to her using a towel to clean up a spill, then to name the towel
<i>Ni-Ni</i>	First as an accompaniment to preparations for bed, then upon seeing others in bed (even pictures), then as she closed her eyes in a pretend game
<i>Dinner</i>	First used while Mommy was making dinner, then to name a plate of food, then as we were sitting down at the table, then as a pretend game in the sandbox (making dinner in a pot)
<i>Cake</i>	First used to name a pile of sand made into the shape of a cake, then while filling a bowl with sand in preparation of making a sand-cake, then when she wanted to play this game, then when she turned over a bowl indoors (no sand, no cakes), then as she carried a bowl to the sandbox
<i>Steps</i>	First used as an accompaniment to her climbing or descending stairs (never to name the object)
<i>Bath</i>	First used as an accompaniment to preparations for bath, then as she bathed her babydoll (never to name the object)
<i>Game</i>	First used for others and then for herself playing with a baseball and baseball glove (never to name objects)
<i>Mi</i>	First used to call Daddy into a room (Mommy sometimes called "Mike!"), then used to call Mommy as well
<i>Make</i>	First used in block play to request that a structure be built, usually so that she could knock it down (and make a "mess")
<i>Mess</i>	First used for the result of knocking down blocks, then when she wanted to knock them down
<i>Outside</i>	First used if she was inside the house and wanted to go outside, or if she was outside and wanted to go in
<i>Mma</i>	First used as accompaniment to kiss

that seemed to refer to activities. Some of these had the disconcerting property that they could apparently be used to refer to either an object or the activity typically associated with that object. On some occasions, for example, she might point and name the "play-play" (piano); on other occasions, she would comment "play-play" as she was playing the piano.

She could go “nite-nite,” but she also called pictures of beds “nite-nites.” She could name a “phone” or request to be lifted so she could talk on the phone. At the time I was keeping the diary I had not seen reports from other researchers that identified this phenomenon precisely, and so I struggled to decide if these were really action words, relational words, or whatever. I still have not seen reports that call attention to these types of words precisely (but cf. Bloom, 1973, and Dromi, 1987); however, I now believe that the issue of whether they referred to objects or actions (or both) is not an issue because they did not refer, in the strict sense of that term, at all. Each was a presymbolic form embedded in a “script,” and thus they did not symbolically represent either the object or the activity (Nelson, 1985). They were not symbols of the object or activity but were themselves a part of the object-related activity (Bates, 1979). A few of these forms became decontextualized so that when a figurative identifier (such as a picture or an associated object) reminded T of the script involved, she would say the word associated with it.

Some of these presymbolic forms were only used for activities, that is, they were never used to name objects. But the important point is that all of the them – regardless of their later decontextualization or lack thereof – began as an accompaniment to an activity. It should also be noted that a few of these forms gradually turned into truly symbolic lexical items at a later developmental period, but the majority simply died out as T lost interest in the activity involved. A summary of the notes on these words appears in Table 3.2.

The next two chapters report on all of T's language using relatively context-free relational words and verbs, both single-word expressions and sentences: Chapter 4 reports change of state words and chapter 5 reports words for activities. Chapter 6 reports all of T's recorded language that does not fall into either of these categories – that is, sentences without verbs – and analyzes a few other grammatical structures more systematically.

Change of state verbs and sentences

Six groups of expressions make up T's change of state verbs: (1) presence, absence, and recurrence of objects; (2) presence, absence, and recurrence of activities; (3) exchange and possession of objects; (4) location of objects; (5) movement of objects; and (6) state of objects. In the six sections of this chapter, I provide a discursive summary of T's use of the particular verbs that fall into each of these six categories (along with some notes on parental usage) – a total of 78 relational words and verbs. I should emphasize at the outset that these categories are not meant to depict anything in T's grammar but are meant only to be heuristics to aid researchers in categorizing the individual verbs. For readers who are interested only in a brief account of individual verbs, each of the six sections ends with a summary text, figure, and table that provide an overview of the semantics and syntax of the verbs falling into that category. An exhaustive list of the diary entries on which these summaries and analyses are based is given in the appendix, organized into the same six sections as the text. Examples from T's speech are often accompanied by a specification of her age in months and days, for example, 19.22.

4.1. Presence, absence, and recurrence of objects

T's expressions falling into this general category were those whose conceptual representations involved in some way an absent object. In the traditional literature (e.g., Bloom, 1973), this encompasses the semantic categories existence, non-existence, and recurrence. The conceptual distinctions and corresponding descriptive conventions that will be needed to differentiate all of the terms falling into these categories are as follows:

1. The distinction between perceptual presence and perceptual absence (designated with a letter and a letter with a strike-through, respectively); in some cases the fact that an absent object is at some unspecified location (e.g., *locO* for O's location) also must be represented.
2. Different groupings of objects or actions: *O* = any object, *X* = any

- entity (including objects, actions, and other experiential items), *P* = people, and other letters as needed (e.g., *F* = food).
3. The presence of a causal agent (actor) responsible for a particular object transformation (represented by means of a causal arrow \rightarrow).
 4. The distinction between representational and perceptual states, for example, an expectation that an object will be present or a verbal reminder of an object is represented by shading the panel containing the object.

It is important to remember that the representations proposed are not meant to represent the entire “meaning” of the expression. The pragmatic intention behind most utterances is not represented. Thus, to repeat my earlier example, the disappearance of a person does not exhaust the meaning of the child’s word *bye*; it may, however, be said to “underlie” it. The one use of pragmatics in the current analyses is for words that are used as requests only. This is because the conceptual situation underlying requests involves a representational rather than a perceptual end point, and it is important in many cases that this be depicted in our representations as it may be the only difference between two completely separate lexical items. The child might, for example, see an object and wish it absent. In this case the desired state is represented by a panel with a dark-lined border. If a word is used as both a request and a comment, the comment use is formally represented, as in all cases the request form merely requires depicting the final step in the sequence as a desired representation.

4.1.1. *Where and find*

Soon after her first birthday, T’s parents began using expressions with the question word *where* in two distinct contexts. The first was the expression “Where’s the bottle?” uttered as we searched around the house for the bottle T had dropped somewhere. (During this process, T was usually crying for and asking for it with “Bottle!”) T’s parents generalized this usage to other contexts in the succeeding months, for example, “Where’s the silk?” (*silk* was her name for her blanket, which she also hated to lose) and “Where’s the ball?” (when the dogs demanded it). The other context was a hiding/peekaboo game in which someone would deliberately hide themselves or some object as T watched. They would then ask her such things as “Where’s Daddy?” or “Where’s the bunny?” A variant on this theme in this context was “Where’d it go?” asked in an exaggerated questioning intonation. (T learned “Where-go?” in this context and generalized it to similar situations, but it was soon dropped from active use. I will thus not report on it further; see the appendix for examples.)

T’s earliest uses of *where* (beginning at 15.28) were all in the expression *whereda-bottle* and all in the situation in which she and her

parents were searching for her bottle. I thus judge this to be a pre-lexical form. Like her parents, however, T soon generalized *where* to related situations in which she was reminded of an absent object and *whereda* became a true pivot word, combining with any and all of her object labels; for example, she asked "Whereda Pete" (16.13) when looking for the dog we were calling. Two important points about these early uses. First, an adult verbal response giving the object's location (e.g., "In your room," to which she had access) would not placate T's demand; to such a response she would repeat her request until the object itself was produced. Second, on some occasions T even asked "Whereda _____" demandingly when the object was in sight but out of reach; clearly in this case it was not the location but the object that T desired.

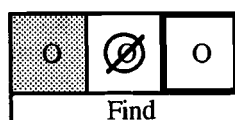
By the video at 16.25, T's demanding use of expressions with *where* had lost much of its conative force. At around this time she began to ask the question in a less demanding way, she asked it only when the object was not perceptually present, and an adult answer that only supplied the name of a location was treated as a satisfactory response. In this new use, the instigation for the question was usually some verbal or nonverbal reminder of an absent object, and T's question often seemed addressed to T herself (absentmindedly, as she searched) as much as it was addressed to adults. On the videotape at 16.25 T asks "Where _____" (the "da" has been dropped) on 23 occasions in 1 hour. She asks, for example: "Where spoon?" as she picks up the bowl and wants to stir in it; "Where bunny?" as she picks up a cup that she knows has a bunny painted on the bottom; and "Where dog?" as she looks through a familiar book for an expected picture. T's later uses at 18 and 19 months of age are very similar to these uses. On the video at 17.26, for example, she asks "Where baby?" as she has the spoon and bowl and wishes to feed the baby. A game she learned at this time demonstrates clearly that T now uses this not as a request for the object itself, but for the location of the object. The "names game" consisted of her asking a series of questions of the form "Where Grandmommy?" or "Where Aunt Toni?" and her parents would respond with "In Florida," "In Miami," and so forth.

I thus propose to represent T's early uses of *where* as follows. The earlier demanding uses consist of a first step in which T is reminded of an object. The second step shows that, upon checking, T finds that the object is not perceptually present. This is followed by the third step, a desire for the object's perceptual presence. T's later question uses have this same general structure with the difference that the desire is not for *O* itself but simply for *locO*, that is, *O*'s location. These two representations are thus:



Presumably one of the reasons why T's use of *where* became less of a demand during the 17-month period was because she learned two other expressions to request objects. One of these, *get-it* _____, was used exclusively for objects in sight but out of reach (analyzed in section 4.3 on exchange–possession). The other was *find-it* _____, which was used when T desired a perceptually absent object. This request for someone to find an object was often expressed at the end of a sequence in which she named the object demandingly (“Truck!”) or asked where it was (“Where truck?”); when it became clear that her parents did not know where it was, T might say “Find-it” – presumably by analogy with parents responding to her *where* questions by telling her to “Find it.” For example, on the videotape at 17.26, T asks her mother where a cracker is and is told; T searches but cannot find the cracker, and so she turns to mother and requests for her to “Find-it.” Soon T began using this expression as an exhortation to herself as she searched for something, for example, “Find-it bird” (17.28) as she searches through a book; “Find-it Weezer” (18.08) as she looks around for a cat after she hears its mew; and “Find the stick” (19.03) as she pulls a popsicle off its stick.

I thus propose that upon its emergence around 17.26 (at which time *where* is becoming a full-fledged question) *find* takes over the early demanding use of *where* expressions in which the object is initially absent (*get-it* takes over those in which the object is perceptually present). This is justified because, as far as I can determine, she is using *find* in the same situations in which she previously used *where*. For example, in looking through a picture-book for specific pictures (on the videotape at 16.25) she says “Where dog?” and “Where fire?” demandingly. At around 18 months, her first three combinatorial uses of *find* all involve looking through books for specific pictures. Thus, because *find* is always a request of this type, its conceptual representation is simply the desire for a perceptually absent object that she has been somehow reminded of. (Perhaps a person who does the finding should be represented, but because T shows no evidence of this – she never names the finder and there are no other noncausal expressions from which it must be differentiated – I assume not.)



During the 20- to 24-month period, the use of both *where* and *find* declines in frequency and importance, although they were both still used. The syntactic form of each is generally constant with some small but important modifications involving articles, pronouns, and the like. (The development of T's grammatical morphology in general will be discussed in chapter 6.) In the case of *where* expressions, by 23 months T used the fully adultlike expression complete with the copula and the article when needed (i.e., the form was "Where's the _____"). Her usage of other expressions with a similar form of the copula (e.g., "That's a _____," "It's a _____") and expressions with the article argue that this was indeed the emergence of the fully adult form of the question. Except for this variation (and the singular exception of "Where you are?" at 23 months), the syntactic form of *where* expressions was constant throughout the period under study: *where* always began the speech act, and the thing being located followed (expressed by the object name with no more than an article or possessive adjective as modification). In the case of *find*, some developments involving function words (*it*, *the*) took place as well. In all 12 of her sentences, *find* preceded the name of the thing being sought (with the exception of two examples of more sophisticated structures involving other verbs: "More find Lulu" and "Come find me"). In no case does T indicate the finder (with the one partial exception of "I found it" on the video at 23 months), and in no case does she indicate the thing being sought with more than an article and an object name. While early on *it* was used even when an object was named ("Find-it birds"), later there is substitution of one for the other (see chapter 6 for a discussion of this phenomenon also characteristic of some other words).

4.1.2. *No, gone, and all-gone*

T thus used *where* and *find* to request absent objects. When T wanted only to comment on the fact that an object was absent – with no desire to know its location or to have it produced – she had several other expressions. Her first at around 16 months was *no*. T had learned this expression from a game of "button-button" in which she was to guess which of two hands an object was in. If she was wrong, the parent would open their empty hand and pronounce "No" (with an exaggerated, rising intonation). T first used the expression in this context and then, at 15.27, to comment that she had not found a doll on her bed after her parents had told her it was there, and that a dog had refused a biscuit it was offered. At 16.02 she picks up her

empty bottle and pronounces “No.” The only other uses of this type occurred at 17.11 when she failed to find her bottle under the table as expected and, at 17.16 and 18.13, in her only two combinations, when she failed to find the boy and the monkey she was looking for in her book (“No boy” and “No monkey”). T also used *no* as a prohibition or a refusal (see section 4.2 on presence–absence–recurrence of activities), but the “disconfirmed expectation” use of interest here died out after 18.13. This was presumably because she learned another expression, *gone*, for this same meaning.

At around 17 months T learned the single word *gone*. T’s parents had originally used this as a response to her *where* questions or to requests for objects there was no possibility of finding or otherwise producing, for example, when her juice was finished and there was no more to be had. T’s parents also sometimes used *gone* as a simple comment on something being gone even when T had not asked where it was or requested it, for example, to comment that a toy was not where it was expected to be – which might then lead to a *where* question from either T or her parents (e.g., “It’s gone. Where is it?”).

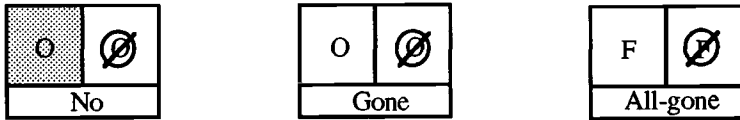
T’s first use of this expression came on 16.18 when her mother had finished a glass of milk. T, who had observed the drinking, picked up the glass and said “Gone.” A few days later she used the same expression after she had poured water from a bowl. On the video at 16.25 there are three examples. In one, T asks where a dog picture is (“Where dog?”), and when she cannot find it pronounces it “Gone.” In the other two examples, T’s mother on two separate occasions tells her to finish her cookie and her drink; on each occasion T does and then pronounces the items “Gone.”

T’s subsequent use of *gone*, beginning at 17.26, involved specifying the name of the thing gone. The first step in the sequence could either be the object’s physical presence (i.e., it physically disappears) or representational presence in the form of an expectation (i.e., something is not where it is expected to be). In all 49 of the diary entries with *gone* used in combination, the pattern was to first name the absent object and to place *gone* after it. Thus, “Peter Pan gone” (17.26) closing the book on a picture, “Hammer gone” (18.27) when her mother put it away, “Music gone” (19.16) after the record finished, “Peas gone” (19.28) after she had extracted them from a bowl of soup, and “Necklace gone” (20.02) after she misplaced it. At 19.23 she first filled the relational slot with something more than an object name: “Tyson paper gone.” At 20.00, she also says “Blue truck gone” and “New paper gone.” The only sentence using *gone* attempting to express more than an indication of the absent object is the cryptic “Ice-cream-sandwich gone a bowl” (20.04) as she

spies an empty wrapper in a bowl. At 19.24 is the only example of her using the copula, which in adult English is necessary since *gone* is a past participle: “Danny’s gone.”

Beginning at around 19 months, T used the expression *all-gone*, mostly as a single word, to indicate that food was finished. This expression was combined with only one food word (“All-gone juice” at 19.09), and there was one aberrant instance where she used it to indicate that a TV show was over “All-gone Ernie–Burt” (18.26) (she learns “Over” for this situation at about 20 months).

It would thus seem that for a period of about 1 to 2 months (17–18 months) T was using both *no* and *gone* when an object was not where she expected it (expectation represented with shaded box, as in diagram). When an object disappeared in front of her eyes, only *gone* was possible (represented below). After 18 months, *no* drops out. At around this same time, *all-gone* takes over from *gone* those uses pertaining to the finishing of food. The representations of these three comment words are thus:



4.1.3. *More and another*

At around 17 months T began using the expression *more* to request more food (there was one early exception at 16.14 that may have been an imitation). Her parents on numerous occasions previously had asked her, after she had finished her food, “Do you want more?” Soon after her first uses, T began combining *more* with the name of the food she wanted more of. For example, on the audiotape at 17.26 (made during breakfast) T asks for “More eggs.” She soon began using this expression for other situations involving recurrence – while she continued to use it to request more food throughout. For example, at 18.07, T had been blowing out matches and so she requests “More matches” when she wants to do it again. A few days later she comments, “More mail” as the postman delivers a package precisely 24 hours after he had brought other mail. At 18.24, T asks for “More jump” (a game of jumping off a table) and a few days later she asks for “More book” when she wants a book read again. Of the 80 uses of *more* — expressions, approximately half concerned food and half concerned other objects or activities. Her only 2 uses of a locative argument were at 17.27 when she said

“More mouth” specifying the location (mommy’s mouth) where she was placing more food, and at 20.02 when she requested “More hand” specifying the location where she wanted more fries placed.

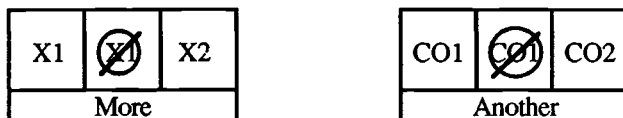
During the 20- to 24-month period, T began using *more* in some more complex linguistic contexts. The first multiword expressions T used to fill the relational slot were “More orange popsicle” (19.23) and “Some more Weezer cherries” (20.01) as requests for items, and “More Pete water” (20.03) as she filled the dog’s bowl. Some days later, at 20.08, she produced the only verblike use of *more* with more than one argument: “More jelly toast” as a request to put more jelly on her toast.

The most dramatic change in T’s use of *more* involved its use as a quantificational modifier, as in adult use, instead of as a relational word functioning as a verb. This is evidenced most overtly by the addition of true verbs or other relational words to her sentences: for example, “Here the more crayons” (19.22), “Linda have-it more cream” (19.24), “Got more” (20.16), “Need more jello” (20.21), and “Go seven-eleven buy more coca-cola” (21.27).

A similar developmental pattern may be seen with T’s expression *another* or *another-one*. Although this term was not used frequently, on several occasions during the 20- to 24-month period T used it to request or otherwise indicate an object that was the same as other objects she had previously obtained. For example, she requested another berry, bead, and acorn all with the single word expression “Another-one.” In her only combinatorial usage, T says “Get-it another one” (20.06) about a chess piece. It would thus seem that *another* has been transformed into an adjective. This is further demonstrated by the emergence of the adjective *other* (along with the demise of *another*), as exemplified in such sentences as “Wash the other ear” (20.08) and “Other bird in the bush” (21.26). As with *more* and *again* (*again* is reported on in section 4.2), presumably adult usage influenced the transition to adjectival use.

The conceptual situation underlying the verblike uses of *more* is similar to those underlying some uses of *find* – for example, if an object that has disappeared is desired back. But that is not precisely it. A close look at the contexts of use of *more* shows that T is in all cases indicating another object (or some more of a quantity), not the same identical object again as in *find*. Thus, *more* is represented as X1 at the first step and X2 (a similar but not identical item) at the third step. This distinction presumably reflects T’s knowledge that in some cases (e.g., when its been eaten) objects cannot be retrieved. Note also that in its uses as a comment (of which there was none for *find*), *more* is used to comment that she sees more or another of something, not that same thing itself (e.g., “More mail”). From 20 months on, the word *another* comes to be used for just

those situations where she wishes more of a countable object (*CO*), that is, another of a collection of similar objects, while *more* refers to other situations including continuous quantities and activities (T also used *again* for some activities; see section 4.2). The formal representation of these two situations is thus:

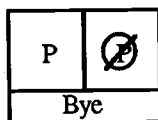
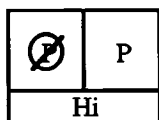


4.1.4. *Hi, bye, and morning*

T's parents "taught" her *hi* and *bye*, as many parents do, as salutations for greeting and leave taking respectively. They also used them for some inanimate objects, for example, when trying to get T to leave something, "Say goodbye to the swimming pool." But T went way beyond this usage and began saluting anything and everything. Both words were used in a pivotlike way nearly from the beginning. Thus, her first uses of *bye* were at around 17 months: "Bye" to her mother leaving in the car, "Bye baby" as she leaves the mirror, "Bye cane" as she throws it down, "Bye outside" as she comes inside, and "Bye plane" as it goes out of sight. At around this same time (beginning a few days later) T produces her first uses of *hi*: "Hi fan" as she enters a room with a fan, "Hi plane" as it flies into view (same incident as for *bye*), and "Hi moose" to a picture in a book. During the next 3 months, both words are used in their normal greeting contexts, but both are also used in creative ways as well. For example, at 19.28, T says "Hi wind" as it gusts in her face. Of the 35 combinations with *hi*, about half involve inanimate objects. This was even more true of *bye*. While it is true that more mundane uses (e.g., "Bye Daddy") are undoubtedly underrepresented in the diary (see Methods), nevertheless, of the 82 two-word combinations with *bye*, the vast majority involve inanimate objects. A sampling of some of the more interesting entries: "Sharp . . . Bye sharp" (17.05) as she opens a book to the staples and then closes it; "Bye dinner" (17.06) as she puts the top on a pretend dinner; "Bye fan" (17.09) as Daddy quits swinging a chain in a circular motion; "Bye-bye thunder" (17.09) as the noise fades; "What's that?" (no answer from parents) "Bye that" (17.14) as we all leave; "Bye water" (18.01) as she pours it from a bowl; and "Bye-bye Ernie-Bert" (18.26) as the television show ends. There is only one syntactic deviation from the pivotlike use and that is the sentence "Daddy bye-bye too" (20.00).

Although T continues to use these two terms in their prototypical greeting contexts throughout, there are no entries of the more creative

uses with inanimate objects during the 20- to 24-month period. It is important to note that during the period when *bye* and *gone* are both used for the disappearance of objects (17–18 months), presumably there is a pragmatic difference – *bye* is a salutation and can thus only be used when objects physically disappear (not when she is reminded of an absent object). But it is also important to note that at around 19 months the use of *bye* for inanimate objects begins to wane, and the use of *gone* begins to become much more frequent; it is presumably taking over the situation involving the disappearance of inanimate objects completely. From at least 20 months, therefore, the formal representations of *hi* and *bye* should employ a *P* for persons instead of an *X* for any entities. They thus become:



One minor variation should also be mentioned. At around 18 months, T began using the greeting *morning* instead of *hi* to greet people first thing in the morning or after they had waked up. Thus, T said “Morning, Mommy” and “Morning Daddy” at 18.22 as she came into the room in the morning, and “Morning, Weezer” at 18.11 as the cat awoke. It is not clear how to represent this situation formally, but I choose to view it as the *hi* situation with the difference coming in some unrepresented aspect of the communicative–pragmatic context. Its formal representation is thus identical to that of *hi*.

4.1.5. On, off, and go-away

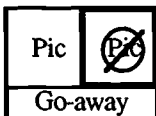
T used *on* and *off* in a variety of complex ways as relational words, verb particles, and locatives. Most of these will be dealt with in section 4.3 on location. However, at around 18 months of age T also began using these words in conjunction with various machines such as televisions, record players, lights, hoses, and so forth that might be turned off or on. The most common usage was a single-word request – for example, to request that a parent turn the lights off or on (the switch being out of her reach). *Off* was combined with other words only three times (without the word *turn*), and in variable positions: “Light off” as a request at both 18.22 and 18.27 and “Off TV” as a request at 18.30. *On* was also combined with other words, and it also occurred in variable positions, but it was more combinatorially productive. At 19.02 T asked to have the “Light on,” but 1 week later asked us to “On the light.” One week after that she asked for the “Light on” and a month later (20.09) she asked for

“Paul light on.” At 20.02 she asked for “On Rascals” (a television show). In all, the thing wanted on was in the first position twice and the final position six times. T’s two comments were at 19.10 “Squares on” (a television show) and “All these lights on” at 20.09. The formal representation of these two words (in their comment uses) thus employs the convention *M* for machines of all kinds:



T’s later usage of these terms underscores the fact that these early uses really are verb uses. In the same contexts as before, T now begins to ask for us to *turn* machines on and off. Thus, at 21.01 T asks us to “Turn that bunny light on,” and one month later asks us to “Turn light on.” She also announces on 21.01 “I will turn on TV, Captain Book. Okay?” On the audiotape at 23 months she tells Daddy to “Turn it off” (record player) and “Turn the light off.” As in several other cases, this relegation of the relational word to the status of verb particle through the use of true verbs as the carrier of the processual content – in precisely the same situations where it carried the processual content previously – argues strongly that the early uses are indeed functioning as verblike structuring devices.

One other expression – which was the only expression other than *off* in which T requested that an object (of sorts) be absent – was *go-away*, which was learned in a very specific context. On the videotape at 19.26, T is drawing on the blackboard with her friend Maria. Maria tells her to erase something, and when T does not understand, Maria tells her to “make the picture go away” as she erases a picture. T uses the expression “picture go-away” as she erases (or wishes to) on 43 occasions in the hour. She also says “Kitty go-away,” “Wagon go-away,” and “Two balloons go-away” as she erases them. The only different pattern is her “Go-away here” as she erases. Because T’s use of a blackboard in any other situation (i.e., other than that in the videotaping room) was infrequent, no other uses were recorded. (T apparently did not generalize this to erasing pencil-drawn pictures.) Because this expression was always a request, the conceptual situation (with *Pic* standing for picture) is thus:



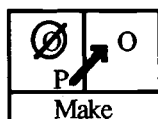
4.1.6. *Make and made*

Make began during the 16- to 17-month period as a prelexical form confined to the situation in which T wanted an adult to build a tower with blocks so that she could knock it down; the video at 16.25 has nine examples of this. At around 19 months, T began to generalize this expression, and concurrently, to use the closely related expression *made*. T used *make* either to request that someone make something or as a comment on her own activity of making. For example, she requests that Daddy “Make a this house” (20.01), and during this same period she comments about herself “Make dinner” as she plays and “Make birthday cake” as she makes one in the sandbox. In the eight sentences of this type, T expresses the maker in only two: “Mommy make a bubble” (19.21) and “It makes a funny noise (23.00).

Concurrently with these uses, T began commenting that objects had been “made” by someone. At around 19 months, she said, “Maria made,” “Mommy made,” and “Maria made this duck” about pictures they had drawn. At 19.07 she says “Maria made book” about a book Maria had given her, and two days later she commented “Linda made ice” about some ice Linda had given her and “Linda made that dress” about a dress that Linda had given her. Her subsequent uses all reflected objects that she had either seen being made or that others told her had been made by specific persons. Thus, “Daddy made this” (19.10) about a string of beads he had made, “Mommy made this picture” (19.12) about a drawing by Mommy, “Made-it pizza” (19.28) about a picture she had just drawn, and, in a telling mistake, “Mailbox made this” (20.10) about a doll that had come in the mail and which she had retrieved from the mailbox. The only variations on this pattern of usage both came at 20.18 when she added adverbial material in “Danny made this like this” as she demonstrates gesturally and “Maria made this real good” about a drawing. (The status of this form as a past tense is discussed in chapter 6.) It is important to note that, unlike all of her other early verbs with the exception of *gave* (which has a very similar pragmatics), *made* always (with only one exception about her own making) expresses the name of the one who made – and this was true even on two occasions when she did not linguistically express the thing made.

The conceptual situation underlying *make* in adult language involves someone or something causing an object to come into existence – as opposed to causing it to appear from some other location, as in *find*. T’s use of *find* begins earlier than *make* and, as argued earlier, shows no evidence of a causal component. *Make*, on the other hand, is used with the maker verbally expressed on two occasions (*made* expresses the maker on numerous occasions) and is first used at a time when causality is an

important component in the meaning of other words. I therefore use a causal arrow in the conceptual representation of *make* to designate that someone causes the object to appear. (It is interesting that many of T's uses of *make* involve things like making castles out of sand or making towers out of blocks for which the constituent materials are already perceptually present; it is just the object to be created that is not present – but it must be thought of first to be requested.) The representation of *make* is thus (with *made* being used in reference to this activity in the past):



4.1.7. Summary

Figure 4.1 presents a summary of the conceptual situations underlying all of T's words designating the presence, absence, or recurrence of objects. The overall developmental pattern may be summarized as follows. *Whereda* _____ is T's first very general and global relational term as a request for either absent or present objects. At around 17 months, it becomes confined to asking for objects' locations, and *find* is now used for requesting absent objects (with other words, such as *get-it*, being used to ask for present objects). When T merely wished to comment on an object's absence, she first used *no*, which was dropped at around 18 months for the more general *gone*. One month later the use of *gone* dealing with food was taken over by *all-gone*. *More* and later *another* were used both to request and comment on the presence of objects, in the condition that a similar object had previously been present and then absent. *Hi* and *bye* always involved an object's physical appearance or disappearance. The difference of *bye* from *gone* in the 16- to 20-month period was presumably pragmatic: *Bye* was a salutation. After 20 months, the use of *hi* and *bye* (and the related *morning*) were confined to adultlike uses with persons only. *On* and *off* were used in specialized situations with machines from 18 months on, and *go-away* was used in the single situation of erasing pictures from a blackboard. *Make* and *made* were used for the situation in which a person caused an object to come into existence. (For general conclusions about overall patterns of semantic development across all verbs, see chapter 7.)

Syntactically, T produced the presence-absence-recurrence of object words in very simple combinatorial contexts. This may be because most of them are not adult verbs (only *find*, *make*, *made*, and possibly *go-away* are adult verbs). Thus, while T's early uses are functionally equivalent

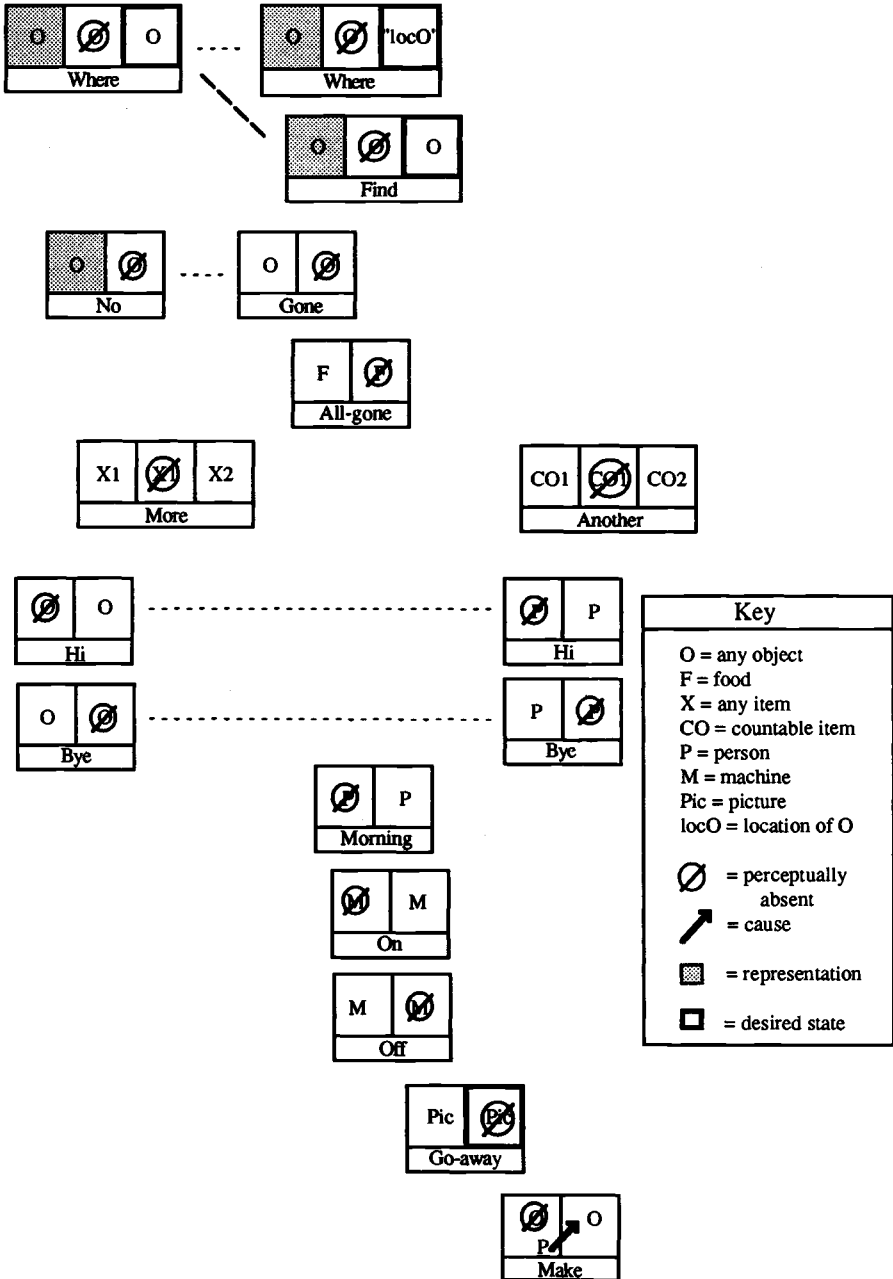


Figure 4.1. Conceptual situations underlying T's presence-absence-recurrence of object words.

to an adult verb – they structure the interrelations of arguments dynamically – the adult models she subsequently heard placed the word in other linguistic contexts. Thus, *more* and *another* gradually became modifiers, *off* and *on* gradually became verb particles and prepositions, and *gone* became a past participle; *hi*, *bye*, *morning*, *no*, and *where* became special function words used as adults use them. *All-gone* drops out of active use.

Table 4.1 presents a summary of the linguistic contexts in which each word in this group was used by T. Depicted are the sentence frames used, specified in terms of the arguments linguistically expressed and how they were expressed. Specifically, for each unique structure type (e.g., two-term expressions specifying object only) T's first and last uses are given as examples (unless they occur within the same time period in which case only the first is listed). Note that for the relational words only one argument is typically possible, for instance, all that is possible is specification of the thing that is gone. For the vast majority of these one-place relational words the object was placed postverbally, for example, *more* had 77 instances of the form "More _____" (and 1 instance where the object and location were specified). This was true of *where*, *no*, *all-gone*, *more*, *another*, *hi*, and *bye*. *On* and *off* had variable orders, with the object sometimes placed preverbally and sometimes postverbally. *Gone* was the only verb in this group for which T consistently put the object in the preverbal position (49 instances), for example, "Ball gone." With the possible exception of *all-gone* (e.g., "All-gone juice") and some uses of *on* and *off* (e.g., "On the light" as a request), T's ordering of predicates and arguments in sentences with these one-place relational words corresponds with the ordering in the most common adult use of these expressions.

As for the two true verbs among this group (ignoring the questionable and short-lived *go-away*), it should be pointed out that, although *find* potentially could have an actor and an object (and possibly locative or benefactive complements as well), it does not. It simply specifies the object in the postverbal position. T's use of *make* also invariably places the object in the postverbal position. In two instances T specifies the actor for *make*. When using *made*, however, T specifies the actor on almost every occasion. Pragmatically, the reason T always specifies the actor with *made* is because this is the reason for the utterance in the first place: to inform who made something. *Make* is more often a request (which does not need an actor even in adult language) or a comment on her own activity (in which case the actor is obvious, at least to T). Nevertheless, viewed in isolation these syntactic patterns are not as meaningful as they will be when compared with those of other verbs. (I attempt to draw some general conclusions about T's syntax in chapter 8.)

Table 4.1. *Syntax of presence-absence-recurrence of object words as a function of age in months*

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Where</i> (44) object post	Whereda bottle	Where dog		Where's my bottle
<i>Find</i> (9) object post (1) actor pre +object post (2) w/ Verbs	Find-it funny	Find Danny More find Lulu		I found it Come find me
<i>No</i> (2) object post	No boy			
<i>Gone</i> (49) object pre	Peter Pan gone	Salad gone	Funny man gone	
<i>All-gone</i> (2) object post		All-gone juice		
<i>More</i> (77) object post (2) location post (1) object post +location post-post (7) w/ Verbs	More corn More mouth	More bacon Here the more Cs	More twinkle More hand More jelly toast	Take more first
<i>Another</i> (3) As Adjective			Get-it another one	
<i>Hi</i> (35) object post	Hi fan	Hi Mommy	Hi mirror	
<i>Bye</i> (82) object post (1) Other	Bye baby	Bye mask	Daddy bye-bye too	
<i>On</i> (Machines only) (6) object pre (2) object post (5) w/ Verbs		Light on On the light	Paul light on On Rascals I will turn on TV	Turn light on
<i>Off</i> (Machines only) (2) object pre (1) object post (3) w/ Verbs		Light off Off TV		Turn the light off
<i>Go-away</i> (4) object pre (1) location post		Picture go-away Go-away here		

Table 4.1 (*cont.*)

		16 - 18	18 - 20	20 - 22	22 - 24
<i>Make</i>					
(8) object	post		Make doll	Make a this house	
(2) actor	pre		M make a bubble		It makes a funny noise
+object	post				
<i>Made</i>					
(3) actor	pre		Maria made		I made
(22) actor	pre		M made this duck	Dana made that	Mark made that
+object	post				
(1) object	post			Made-it pizza	

Note: *Morning* was used as a single word only. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

4.2. Presence, absence, and recurrence of activities

The defining feature of words in this group, as distinct from those in the previous group, is that the experiential item undergoing transformation is always an activity. Thus, each of the formal representations for words in this group will have an *A* (for an activity) somewhere in it, along with at least one step of perceptual absence. It is also necessary to introduce one further formal convention. Representations of several of the words in this group require the designation of *who* is performing an activity. Thus, *T* wants to take a "turn" on the bagswing, she wants to do it "too," or she wants someone to "help" her. To represent these situations, I will designate the person performing an activity (with *E* designating "ego," that is, *T* herself) as follows:

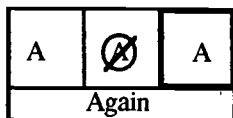
- $P > A$ = a person performing an activity
 $E > A$ = "ego" (*T* herself) performing an activity
 $P > A +$
 $E > A$ = *T* and a person performing an activity together

As in the case of objects in the preceding word group, it will also become necessary in a few cases to designate the class of activities involved. These will be designated by prefixing another letter to *A*; for example, *help* asks for an adult to join *T* in her "difficult activity" (one she is having trouble with) or *DA*. Also in some cases it will be necessary to designate the negation of an activity, which will again be done with a strike-through.

4.2.1. *Again and do-it*

At around 17 months T began to use the request *again*. T's parents often ask her after some activity "Do you want to do it again?" Thus her first three single word uses at around 17 months were requests for repetition of a tickling game, a horsie game, and a throwing game. As T expanded the use of this expression to other situations, it came very close to her expansion of *more* from the food situation. Thus, at 17.07 she requested "Again . . . book"; a few weeks later she asks for "More book." At 17.06 she requested that Daddy give her another bite of food by requesting "Again," when she easily could have asked for "More." A week later, after her mother had given her one potato chip in her hand, she held out her other hand and asked "Again"; again *more* would also have been appropriate. Perhaps the clearest example of this close relationship comes at 18.07 when she wants the match game played again; she asks "Again matches. . . . More matches" within a few seconds of each other. During the period from 17.07 until 19.22 (at which time *more* begins to be used as an adjective), for the most part *more* is used to request other instances of objects, whereas *again* is used mainly to request repetition of activities. But because many games were named by the objects involved (see chapter 5 on activities), T produces "Again bubbles" (18.23) when she wants an adult to blow more, "Again feet" (19.01) when she wants to play a foot game again, but also "Ride again" (18.20) when she wants to ride another time (the previous time had been days before). All four of her two-term expressions (without other verbs) place the thing to be repeated in the postverbal position.


For both *more* and *again*, it seemed to her parents that the other expression could have been used on many occasions. Presumably the distinction depended on whether she conceptualized her desire in terms of *more* activity with an object or the enactment of the activity *again*. The conceptual situation underlying *again* (as a request because that was its only use until very late in the study) may thus be represented:



During the 20- to 24-month period, *again*, like *more*, begins to be used in a more adultlike adverbial way – in combination with true verbs – instead of as a verb. Thus, at 19.18 T asked to "Read this book again" and at 22.04 she commented "I see you up there again." The most telling utterance concerning the new status of both of these terms for recurrence

comes at 22.03 when T asks to “Have more again” when she wants more cereal. Neither *more* nor *again* is acting in a verblike way in this utterance, but, as in adult usage, a true verb carries the weight of the action involved (in this case *have*).

During the 19- to 20-month period, T began using a second word as a request for an activity. If there was some activity she wanted to engage in, she requested it by demanding “Do-it” – for example, wanting to swing when another child is already on the swing. This expression was used fairly frequently as a single-word request (although these were not systematically recorded at this late date). The only two combinations with *do* in its uninflected form are “Do-it self me” (20.23) when she wants to undress herself, and “I will do that” (21.01) about hanging on the monkey bars; variants are “Weezer did-it” (19.13) after the cat had performed a forbidden activity, “I did it” (23.00) commenting, and “Whatcha doing?” (23.00). (The use of past tenses is discussed in chapter 6.) The conceptual situation underlying this expression is thus a general activity request, that is, *again* without the sense of repetition. Because this word was used only as a request during the period of study, its representation is thus:

	A
Do-it	

This of course does not include T’s later uses of *do* as an auxiliary verb in such sentences as “Does it go, Daddy?” (23.00). It also does not cover two uses on the videotape at 23 months of the “What’s that doing in there?” variety that presumably indicate for the first time the use of *do* as representing some generic activity.

4.2.2. *Help and with-me*

Another of T’s early words was *help*. She first used this expression during the latter half of her 16th month as a single-word request that someone extricate her from a difficult situation, for example, as she is falling off a couch, falling out of her car seat, or losing control of an awkward pillow she is carrying. Her combinations, however, began to show a more general usage. At 18.08 she produced her first combination “Help a down” asking Mommy to help her off a high place. At 19.27, T asks for “More help,” nominalizing it. At 20.01, she says “Help this water” as a request for assistance with a recalcitrant spigot, at 20.02 she asks a parent to “Come help me,” and at 20.27 she asks “Daddy help me with this.” While in its early uses *help* may be some

type of general alarm call (and thus a presymbolic form), by the later uses it is clear that the conceptual situation in which *help* is used is something like the following (with *DA* referring to an activity in which *D* is having difficulty achieving her goal):

E>DA	E>DA+
	P>DA
Help	

Another short-lived but very important early expression for T was *with-me*. When a parent left the house they sometimes asked “Do you want to come with me?” T then began using this expression in the 19- to 20-month period to request that she accompany a parent (especially in the car). At 19.30 she says “Cars with-me” as a request to bring her toy with her. Subsequent usage of this term is as a preposition (e.g., “Pete go with-me garbageman,” 20.03, to comment on the dog chasing the garbageman), with the *me* particle dropped at around 21 months (e.g., “Daddy help me with this”; see Tomasello, 1987, for a fuller description of this term’s prepositional use). It would seem that *too* takes over some of the meaning of this request at a later stage, as evidenced by T’s expression at 20.00 “Daddy bye-bye too” used to request that she be allowed to join her Daddy who is leaving.

The conceptual situation underlying T’s early use of this term as a relational word request is thus (with *LA* designating a leaving activity):

P>LA	P>LA+
	E>LA
With-me	

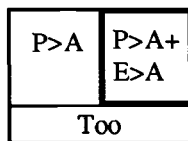
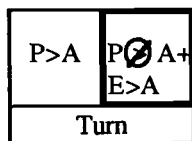
4.2.3. *Too and turn*

Two related expressions illustrate variations on the theme of persons joining T, or her joining them, in activities. First, T learned during the 19- to 20-month period the single word *too* to request to join in an activity with another person already engaged in it. In contrast to *with-me*, which was confined to the leaving situation, from the beginning *too* could be used to request almost any activity (joining Mom on the bagswing, Daddy playing basketball, etc.). Later, during the 20- to 24-month period, T learned to use this term in its more adultlike abverbial function, for example, “Draw too” (19.16) as a request to join Daddy’s activity, “Daddy, Stu, basketball too” (19.24) when she wants to play too, “Daddy outside

too" (20.0) as a comment that Daddy is accompanying others outside, and "One me too" (20.23) as a request that she, like Daddy, have a piece of meat. As mentioned, she even used this expression in the leaving situation (with other verbs) from 20 months on.

A closely related expression is the single-word request "Turn" (translated by us at the time as "It's my turn"), first used during the 19- to 20-month period when T wanted to engage in an activity that someone else was engaged in and that she could not engage in until they were finished (e.g., on the bagswing). Her one combination is "No... Travis turn" (19.26) to the suggestion that it is someone else's turn. This may indicate a change of function toward its adult form as a nominal.

The formal representations of the conceptual situations underlying *too* and *turn* thus require (as in the case of *help* and *with-me*) the representation of two persons engaged in activities (or not) simultaneously. *Turn* depicts the situation where T wants to replace a person in an activity; *too* depicts the situation where she wants to join a person in an activity. (*With-me* at an earlier time also requests joining for the special activity of leaving. *Help* indicates the situation where T wants the person to join her in an activity.) The current two words are thus best represented as:



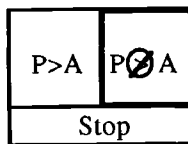
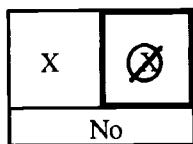
4.2.4. *No and stop*

The previous six words in this group all concerned enacting or repeating an activity. The next nine deal with the cessation of activities; the two earliest and most general of these are *no* and *stop-it*. In the period between 16 and 17 months, T began using *no* quite widely to refuse, reject, or otherwise attempt to negate some undesired activity – either her own activity or another person's. For example, at 16.17 she tells herself "No" as she spills her milk; 6 days later she tells herself "No" as she reaches for a forbidden object; on the video at 16.25 she tells Daddy "No" as he attempts to look at her drawing; and at 17.10 she tells Mommy "No" when she does not want her to leave. On the video and audio at 18.25 and 18.26, she uses "No" to refuse or reject a variety of parental verbal or nonverbal suggestions: to play with something else, to "Come here," to have some milk, and to get the clown out of the box. On the video and audio at 19.26 and 19.27 several similar refusals occur to suggestions that T have some milk, play with her blanket, put her baby

down, let Maria have a turn, draw a picture, and have help drawing a picture. During the 20- to 24-month period, T uses *no* as a preface to more complex sentences, but it does not seem to be a negative particle per se. Thus, she says “No, not like that” (21.08) to correct her father and “No, draw-it by the Santa Claus” (23.00) to correct her mother. Throughout the entire period of study, T uses *no* to answer parental questions (in the early stages, even when she meant yes).

At 18.17 and 18.19 T says “Mommy, stop” to her mother to request that she quit riding a merry-go-round and again to request that she quit bothering T while she pretends to sleep. On the video at 18.25, T tells Daddy to “Stop-it” as he plays with her toy. In the period from 19 to 20 months T tells people to “Stop-it” when they are throwing water on her, playing with her hair, playing with her doll, restraining her, and helping her with her juice (19.26 video). In all cases, the form was simply to append the name of the addressee in either position: “Maria, stop-it” or “Stop-it, Daddy.” In only four cases did she attempt to specify what she wanted stopped: “Stop-it bike” (18.29) when she wants Mommy to quit pushing the bike, “Stop-it Maria water” (19.07) when she wants Maria to quit prohibiting her from putting her hands in the water, “Stop push me” (19.27) when she does not want to be pushed any more, and “Stop rain” (19.28) when she wants the rain to stop. It should be noted that when *no* is used to request cessation of activities it almost always refers to activities that T herself is supposed to perform. *Stop* is always used to request that others cease and desist.

The formal representation of *no* thus is the most general rejection possible (all objects, activities, statements, etc.), whereas the representation of *stop-it* is confined to activities that other persons are performing.



4.2.5. *Self, leave alone, and let-go*

The single word *self* was used prior to 20 months to request that someone quit interfering with T's ongoing activity (e.g., playing with a puzzle). After 20 months there are several cases where she seems to be zeroing in on the more adultlike function of this term, for example, at 22.03 she says “No Mommy. Wipe my butt off self” and at 22.07 “Take it off by myself.” It seems clear throughout that *self* referred to the activity and not to the object of the activity. In contrast to the more general *stop, self*

requested that a person stop doing an activity that T herself was already engaged in.

A related expression is learned and used in complex sentences beginning at around 21 months: T tells people to “Leave _____ alone.” For example, she tells herself to “Leave Stu’s beer alone” (20.27); she tells Mommy to “Leave me alone” at 21.01 and Daddy the same 2 weeks later; and she tells various people in the interim to “Leave that cup alone,” “Leave Mommy’s pen alone,” “Leave my tummy alone,” and “Leave Mommy’s drawer alone.” In two cases at the beginning of this period she uses the name of the person addressed: “Nanna leave Weezer alone” (20.27) and “Stu leave Mommy’s coffee alone” on the same day. In contrast to the use of *no* as a general rejection of all types of experiential items (objects, activities, statements), *leave alone* was used specifically to prohibit others or herself from performing some forbidden activity.

A third expression in this same category is *let-go*, which is learned during the 21- to 22-month period, mainly as a single-word request that others let go of T. Of special importance was the situation of crossing the street when T would want a parent to let go of her hand so she could cross alone. The one sentence “Let go my hand” (21.16) was in this situation.

The formal representations of the three terms in this subgroup would thus be (with $P > FA$ representing a person – including T herself – performing a forbidden activity, and $P > HA$ representing a person engaged in a holding activity):

E>A+	E>A+
P>A	P⊗A
Self	

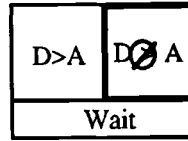
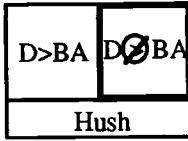
P>FA	P⊗FA
Leave-Alone	

P>HA	P⊗HA
Let-Go	

4.2.6. *Hush and wait*

Two minor variations on the request for cessation of an activity theme are represented by two words learned as single-word requests during the 20- to 24-month period. As prohibitions, T learned *hush* and *wait*. These were both used mostly with the dogs, the former to tell them to cease barking and the latter to tell them to refrain from rushing out the door, gobbling their food, and so forth. They were used almost exclusively as single-word requests and in all cases after 20 months. The combinations only involve an addressee, and thus are not true combinations: “Hush, Pete,” “Hush, Cinnamon,” and “Hush, dog,” all on 20.02, and “Wait, Daddy, got the guide” (20.00); all of these merely add the name of the addressee to the single-word request.

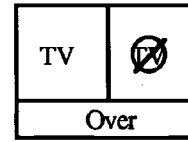
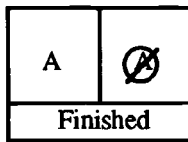
The formal representation of these situations is thus (with *BA* standing for barking activity, and $D > A$ representing the dogs engaged in any activity):



4.2.7. Finished and over

In addition to words requesting the cessation of an activity, T also learned two words to comment on the cessation of an activity. During the 20- to 24-month period, T learned to make two announcements regarding certain activities. First, she began announcing “Finished” when she had finished an activity she was engaged in: going to the bathroom, eating, taking a bath, and various other activities. It was almost always used as a single-word comment, with the exception of her request at 21.13 to “Finish Doo-dads” (a food) before leaving. At around this same time she also began to announce that certain television programs or images were “Over.” (*Over* has other spatial uses that are discussed under Location in section 4.4.) It was used as a single-word comment, but T also combined it with the thing over, for example: “Football over” (20.01) when the program was over on television, “Man over now” (20.02) as a man’s face went off the air on television, and “Pretty girl over” (20.26) as she left the air on television.

The formal representation of these two comments on the cessation of an activity is thus:



4.2.8. Summary

Figure 4.2 summarizes the conceptual situations underlying the expressions in this group. The earliest learned words were *again* as a request for the repetition of an activity, *help* as a request for assistance in an activity, *no* as a rejection of all types of experiential items (objects, activities, statements) and *stop-it* to request that a person cease in a specific activity. *Do-it* is learned as a general request for activities at around 19–20 months, and *with-me*, *too*, and *turn* are all in this same general period

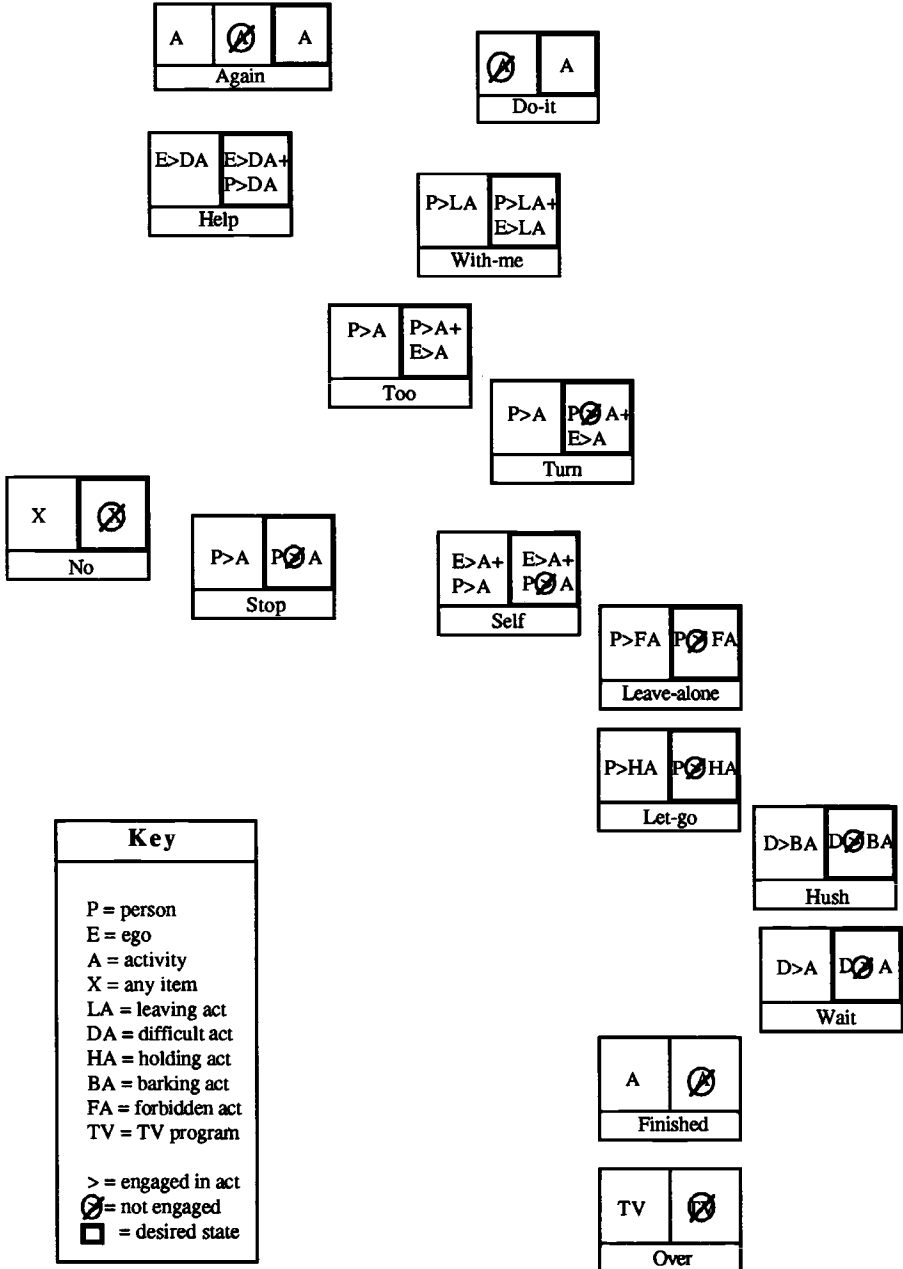


Figure 4.2. Conceptual situations underlying T's presence-absence-recurrence of activity words.

to request activities in specific circumstances: in the leaving situation, the situation where she wants to join someone in an activity, and the situation where she wants to replace someone in an activity, respectively. *With-me* drops out in favor of *too* (in conjunction with a verb) at around 20 months. *Self*, *leave alone*, and *let-go* are learned after 20 months as variations on the rejection–cessation theme – when she wants someone to cease helping her, to cease an activity on a forbidden object, or to cease holding her – as are the highly specialized *hush* and *wait* used as directives to the dogs almost exclusively. *Finished* and *over* are also learned in this later period, and their use is confined to simple comments on the cessation of activities – activities generally in the case of *finished* and mostly television programs in the case of *over*.

The syntax of the presence–absence of activity words, like that of the presence–absence of object words, is very simple (see Table 4.2). Many of these words are used primarily as holophrases. This would seem to result from the fact that the persons involved were usually apparent from context, as well as that more than half of these words are not true verbs (8 of 15). Thus, *again* goes from being a holophrastic predicate to being an adjective with only four relational-like uses. As with *more*, the object is in the postverbal position in all cases – which, incidentally, would seem to be inconsistent with adult usage (they would say “Do you want to _____ again”). *With-me* turns into a preposition after only a brief stint as a relational predicate. *Too* and *self* are used only as holophrastic requests and later as their true adverbial selves, and *no*, *turn*, and *hush* are used as holophrases only. The preposition *over* acts as a pivotlike expression with the object in the preverbal position (following adult order – “The _____ is over”) for a period of about 1 month.

Of the 7 true verbs, only 1 is very productive syntactically. *Wait* is used as a holophrastic request only, and *do*, *help*, *finish*, *let-go*, and *stop* have only 16 sentences among them, only a few of which were adultlike, and none of which showed any strongly consistent patterns. The only truly productive patterns among this group of predicates were the “Leave _____ alone” and “_____ leave _____ alone” patterns.

4.3. Exchange and possession of objects

Expressions falling into this category involve the movement and transport of objects among people; in some cases the control or possession of objects by people is also involved. Possession is a very complex concept in its adult form, but in its child form it presumably rests on a more sensory–motor base: the habitual spatial–temporal contiguity or control of an object by a person. Thus, distinguishing possession from simple spatial collocation is difficult. In the current analysis, I assume that in

Table 4.2. *Syntax of presence-absence-recurrence of activity words as a function of age in months*

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Again</i> (4) object post (4) w/ Verbs	Again fire	Again feet Ride again		I see you up there again
<i>Do</i> (3) actor pre +object post (1) Other		Weezer did it	I will do that Do it self me	I did it
<i>Help</i> (1) object (1) actor pre +recipient post +object post-post+prep (2) Other		Help a down	Help this water Daddy help me with this Come help me	
<i>With-me</i> (excluding use as preposition) (2) Other		Cars with-me	Pete go with-me garbage man	
<i>Too</i> (5) Others (15) w/ Verbs		D, S basketball too Come-in too	One me too Have one too myself	
<i>Stop</i> (4) Other		Stop-it bike Stop-it Maria water	Stop push me Stop rain	
<i>Leave alone</i> (7) object mid (2) actor pre +object mid			Leave Stu's beer alone Nana leave Weezer alone	
<i>Let-go</i> (1) object post			Let go my hand	
<i>Finished</i> (1) object post			Finish Doo-dads	
<i>Over</i> (5) object pre			Football over	

Note: *Turn, no, self, hush, and wait* were used as single word requests only (or else as adverbs, which are not included here). For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

the beginning, possession is basically equivalent to collocation for the child – an object is located at a person – and thus a request for an object another person is controlling is simply a request that the object go from its current location to the self as a location. As the child learns more

expressions, some of which would seem to be distinguished from others only on the basis of some possessive element (e.g., *hold* versus *have* as requests for objects), and as she learns specifically possessive constructions (e.g., “Mommy’s bowl,” “My toy”), we may begin to attribute to her something closer to the adult concept of possession. In the formal analyses of this subsection, therefore, I will at first posit *P* (persons) and *E* (ego) as locations only, designated by a bounded area. I will later be forced to posit them as possessors, in which case the bounded area (not the entire panel as when a representation is depicted) will be shaded.

There will be several cases where it is important how the child is to come into possession of the object; thus the causal arrow (\rightarrow) will assume more importance in distinguishing related terms of this group. As before with *make*, I avoid use of the term *agent* because of its connotations in linguistic theory and will instead simply show a person causing the object transfer.

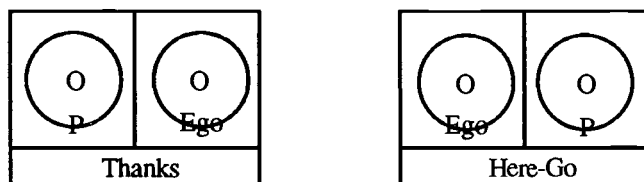
4.3.1. *Thanks and here-go*

Like *hi* and *bye*, *thank-you* was an expression that T’s parents sought to teach her for use in appropriate social situations. They thus instructed her to “Say thank you” or “Say thanks” when she was given an object. They also used *thank-you* in two other situations of exchange. They also said “Thank you” or “Thanks” when T gave them an object, and they also said “Thank you” on some occasions when they took an object from T (e.g., when T would not relinquish an object that an adult had asked for, he or she might take it from her forcibly and say “Thank you” or “Thanks”). As a consequence, T’s early usage was not confined to her thanking other people for objects or favors. For example, at 16.12 T said “Thank-you” (her form at this time was “Dankoo” with the appropriate rhythm and intonation) when her mother gave her her bottle, but later on the same day she says “Thank-you” as she gives a cracker to Daddy. Two days later she says “Thank-you” as a forbidden plant is being taken away from her, and in succeeding days she uses the same expression as she pours water on the plants, as she fills a bowl from a faucet, and as she places berries on a couch. On the video at 17.26 is the last record of T’s using *thank-you* as she is giving an object to someone else. As this overgeneralized use is dying out, T is beginning to generalize *thank-you* in adultlike ways – that is, to more than just the reception of objects. For example, at 17.07 she thanks Daddy for showing her how to open a door, and at 18.25 (video) she thanks Mommy for taking the stem off an apple. In terms of syntax, *thank-you* is not an expression likely to be used in complex sentences, other than a combination with the addressee as in “Thanks, Daddy,” and so the only example of its use

after 20 months comes at 21.10, "Thanks, Mommy, bring a chips" as Mommy brought her chips. (She undoubtedly continued to use the simple expression "Thank you," although it was not recorded after 20 months.)

As T ceased to use *thank-you* as she was giving objects to people, she learned another expression for this same purpose; presumably she retained the idea that this social function ought to be communicatively marked. At around 19 months, T begins to say "Here-you-go" (her form was simply "Go") as she handed an object to someone. T's parents had modeled the adult form of this expression on numerous occasions previously. This expression was not subsequently used in complex sentences, and so there is no documentation of the further use of this expression beyond the two video examples: one at 20 months, "Go, Maria" as she hands her spoons, and one at 23 months, "There you go" as she gives an object to Daddy.

The conceptual situations underlying these two early performative expressions for object exchange (after they have become differentiated) are thus reverses of one another:



Initially (16–18 months), *thank-you* was used for both these situations. At around 19 months, *here-you-go* was learned for the second of these (giving) and *thank-you* became confined to the first (receiving), as well as some other instances of helping not depicted in these diagrams (e.g., receiving assistance rather than objects).

It is important to note a difficulty with the introduction of *P* as a designation of the category people. A problem for many of the words in this group is whether or not *P* includes T herself. I will adopt the following convention. If *Ego* is not in the diagram, *P* will refer to all persons including T. If *Ego* is in the diagram, *P* will refer only to persons other than T.

4.3.2. *Get-it and got*

At around 17 months, T learned her first verblike expression for requesting objects that were in sight (except for the very early and very brief use of *whereda* in this context): *get-it*. T's parents used the expression *get-it* with T in at least three distinct situations: saying "I'll get it" as they went to get the telephone, telling T to "Go get it," and telling T when

she asked them for an object "You can get it." T thus learned "Get-it" as a request to others for objects that were in sight but inaccessible. She also used this expression to comment on her own activity of getting (this might be considered as a self-directive or request to herself, as with *find*, etc.). Early examples include: "Phone get-it" (16.25) as she goes to get it, "Coffee get-it" (17.07) pointing and requesting, "Ball get-it" (17.08) as a request to Daddy, and "Cookie get-it" (17.09) as she retrieves her dropped cookie. A few early uses are slight variations of this theme. Thus, in addition to the prototypical uses to request objects and to comment on her own activity, T also says during the early phases of use "Mama get-it" (17.07) when she wants to swim to Mommy and "Spoon get-it" (17.07) as she hands a spoon to Daddy.

In terms of early syntax, T uses *get-it* as a single-word expression infrequently, but her pivotlike uses do not show the consistent preference for a single ordering that characterized some other relational words at this stage (e.g., *bye*, *more*). Thus at 16.26 T requests "Bottle get-it," and 6 days later says "Get-it hat" as she goes for it. There do not seem to be any differences of semantic intention associated with these two forms. During the period from 17 to 18 months, the former pattern is by far the predominant one: 25 entries to 2. But at 18 months, T begins ordering terms in the opposite manner: "Get-it silk" (18.03) and "Get-it puppet" (18.11), for example, and this soon becomes the dominant pattern. During the next 2 months (18–20 months) there are 11 two-term expressions beginning with *get-it* and 3 beginning, as before, with the name of an object.

At around 20 months, T's use of *get* becomes complicated in several ways. On the one hand, she begins using it in combination with several verb particles to form the periphrastic verbs: *get-out*, *get-off*, and *get-down*. These will be dealt with in section 4.5 on movement of objects. In the current context, on the other hand, three other variations are important: the specification of the person involved in retrieving the object, the addition of locative and benefactive phrases to two-term expressions, and the use of *got* to indicate that someone had in the recent past obtained an object.

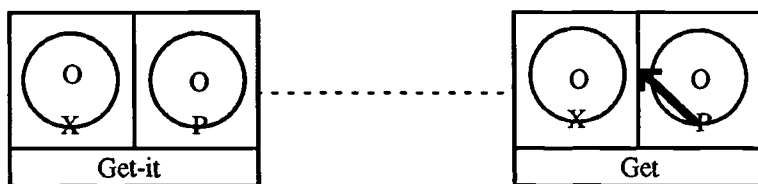
First, at 19.29, T names the retriever of the object: "Mommy get sauce" as she is getting the sauce down from the shelf. The next day she comments "Me get-it" as she tries to retrieve her toy. A few days later she comments "Daddy get-it bottle" as he did so, and a month later (20.29) she proclaims "Monsters get people." Second, at the same time that she was producing these sentences, she began producing sentences without agents but with additional locative or benefactive information tagged onto the end of the sentence. At 19.26 she says "Get-it on steps" as she goes for her bottle on the steps. She

goes on to specify both the thing to be retrieved and its location as in “Get-it wagon porch” (20.09) as a request to get the wagon (from the, or which is on the) porch; “Get grapes at Big-Star” (20.18) as a request to get grapes at the store; and “Get pillow on the floor” (23.00) asking for the pillow that is on the floor. About 1 month after she began with locative phrases, T also began specification of the person to receive or benefit from the object. Thus, she produced “Get raisins to me” (21.00) as a request and “Get that paper for me” (21.07) as a request during the 20- to 24-month period. Interestingly not until 23 months does T express both actor and locative–benefactive information in a single sentence, for example, “I’m gonna get more ice-cream” and “He can’t get one.”

The third variation of interest involves the form *got*. At 18.13 T says “Got-it Weezer” after she caught the cat she had been chasing; at 18.25 she says “Got-it ball” in an analogous situation; and at 18.29 she says “Ring got-it” after she picked it up. About a month later, at the same time she was beginning to supply agents for her expression with *get*, T produced “Danny got me” (19.28) after he retrieved her from the monkey bars and, a few days later, “Wait, Daddy, got the guide” to tell someone not to bother looking for it. At 21.09 she says “Got for you, Maria,” as she brings her a doll. Two of T’s uses, at 20.19 and 20.24, are “Lady got umbrella” (on two separate occasions) simply upon seeing that situation, with no retrieval seen. This would seem to be synonymous with T’s stative use of *have*, as her “Girl have that umbrella” (19.23) attests. (The status of the past tense for T during this period is discussed in chapter 6.) Some of the latest occurring examples show even more complexities (mirroring adult use of this complex verb), for example, as an expression of obligation in “Got to hold it” (23.00) and as a substitute for *become* in “Maria got really mad” (23.00).

An argument could be made for placing an actor who does the retrieving in the representation of *get*. T’s early uses, however, merely indicate that she wants something, not how she gets it. At around 20 months, however, T learns the related expression *have* (see next subsection) from which *get* needs to be differentiated. This coincides with T’s first naming of the actor in *get* sentences. Thus, I will posit that the one who does the retrieving only becomes an operative part of T’s use of *get* at around 20 months.

The conceptual situation underlying *get-it* in its less and more mature forms may thus be depicted as in the diagram below, with X designating some unspecified location other than the terminal location. *Got* refers either to this transformation happening in the past, or else to the current result of such a transformation (as in “He’s got it”).



Note that *P* is used here to include *T* as well as others. Thus, although the vast majority of her early uses of *get* were when she herself received the item, sometimes others could be the recipients (e.g., “Spoon get-it” as she hands it to Daddy). In the later uses, all possibilities are evident: *T* getting things for herself or others and others getting things for *T* or themselves.

4.3.3. Back and hold

Two other expressions for requesting visible objects were learned by *T* at around 17 months: *back* and *hold*. *T* used *back* as a request for an object that had been taken from her by another person or that she had otherwise lost possession of. Her parents often asked in that situation “Do you want it back?” They also told her on some occasions to “Give it back” when she had taken something from someone else. For example, at 17.10 she requests “Back” of an object taken from her; at 17.11 she requests that food being cleared from the table be brought “Back”; and at 17.16 she requests that a ball she threw down the stairs be brought “Back.” Her only combinations in this usage are “Back salt” (18.25) after it had been taken from her and “Back, Weezer” (19.26) asking Weezer to give back her silk. A slightly different usage occurs at 19.30 as she comments “Back these” as she puts the dolls back on the shelf.

As with some of the presence-absence expressions, *back* changes from a verb into a verb particle during the 20- to 24-month period. She thus produces during this later period sentences such as “Come back here popcorn,” “Snap back right here,” “Have that back,” “Put my shoes back on,” and “Roll it back for me.” Again, because some of these (i.e. “Come-back” and “Have-back”) are used in situations where before she would simply have requested “Back,” it would seem certain that the function of this expression changed during this period to one of a verb particle.

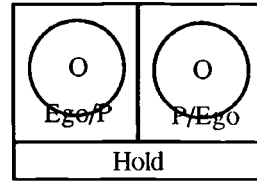
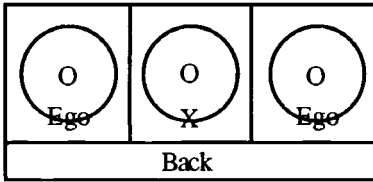
The other expression for requesting objects, *hold*, also began at around 17 months. *T*’s parents had used this expression to tell *T* to “Hold this” or to tell her “I’ll hold that” or “You hold it.” They had also used it to each other when *T* was transferred, “Hold her,” and to *T* to ask “Do you want me to hold you?” *T*’s earliest single-word use at 17.00 was to request being picked up and held. But on the same day she tells Daddy

to "Hold-it" as she gives him her bottle for safekeeping. At 17.03 she requests that she be allowed to "Hold" her bottle herself, when a parent was already holding it. These latter two uses then predominate. Although it might seem that *hold* should be an activity verb, because it designates a specific activity in adult language, I do not believe that it was for T at this time; it signaled object transfer. At a later date it undoubtedly does become the name of a specific activity.

In terms of syntax, after her first combination ("Mommy hold" as a request that Mommy hold her) at 17.07, the vast majority of T's subsequent combinatorial uses were requests that she be allowed to hold something that someone else was already holding. Thus, "Hold Weezer" (18.06) when she wants to hold the cat a parent is holding, "Hold this spoon" (19.03) requesting that she be allowed to feed herself by wielding the spoon herself, and "Hold this Maria's necklace" (20.02) when she wants to hold a necklace a friend is holding. There are 34 entries of this nature. There are 5 entries where she gives an object to someone and orders them to hold it. For example, "Hold the silk" (18.27) to Mommy as she gives it to her and "Hold the grape-juice" (19.16) as a request that Mommy hold it while she plays. On two occasions (at 19.14 and 19.17) she comments on the fact that she is holding something: "Hold towel" and "Hold-it scissors."

During the 20-to 24-month period, T produced several complex sentences with *hold*. Three were utterances in which the holder was named: "Daddy hold mine" (20.10) as a comment that Daddy is holding her new crayons, "Mommy hold my hand" (20.12) as a request before they crossed the street, and "I hold it" (23.00) as a request. Two others involved a locative phrase being added onto the end of a two-term combination: "Hold me in the rocking chair" (20.27) and "Hold me in the lap" (21.01) as requests. On 20.08 she said "Hold this wallet now" as a request, and on the video at 23 months she asks "Can you hold me?"

The conceptual situations underlying these two object requests are thus similar in that they are used (as *get-it*) in situations in which T desires an object that she does not have. *Back* is distinguished by the fact that she must just previously have had the object in her possession (later this generalizes to the return to all kinds of previously held positions in addition to possession). *Hold* is distinguished by the stipulation that the object she wants is currently being held by another person. She also uses *hold* to give objects to others for them to hold; this is definitely not the case for *get*, as T typically is telling the person (sometimes herself) to retrieve it from somewhere else not in another's possession. The conceptual situations underlying these two expressions may thus be represented as:



Note that the depiction for *back* is of the earlier meaning in which something returns to Ego. Later uses substitute for Ego some specified location, as in “Snap back right here.” For *hold*, the *P/Ego* and *Ego/P* conventions are meant to depict the fact that the object transfer may go in either direction, but a simple *P* is not used in both places because the transfer is not to and from two people other than T.

4.3.4. *Have, give, and gave*

At 19.20, T began using the related expression *have*. On that day there are two requests for objects: “Balloon have-it” and “Have-it cards.” In the succeeding two weeks she produces six sentences in which the one who has as well as the thing had is specified. Two are offers to others (requests for them to take an object), for example, “Daddy have this wallet” as she gives it to him. And four are comments that someone has something, for example, “Girl have that umbrella” and “Linda have-it more cream.” At around 20 months T begins adding locative or benefactive phrases, for example, “Have juice in my bottle” (21.16), “Have a doughnut for you” (21.20), and “Have peanut butter in it” (22.07). Several other sentences add expressions that were previously used as verbs: “Have one too myself, Daddy” (21.16), “Have that back” (21.21), “Have Mommy fix-it” (20.27), and “Have more again” (22.03). One other sentence of interest is her one use of the past tense: “Yesterday Maria had umbrella” (21.09). (Her one use of the third person is in the sporadic notes at 24.28: “She has snakes in her neck.”)

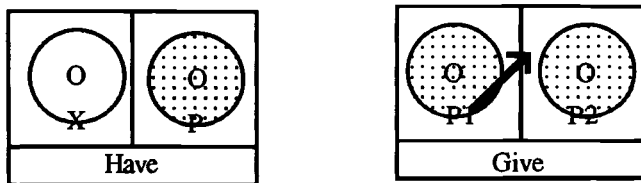
A related expression learned during this same general period is *give*. This expression never became frequent during the period of study. At 19.16 T began to use “Gimme” (“Gimme me” as a request) and there is one video example at 19.25 of T asking her friend to “Give-it” (a toy the friend had). At 20.01 she asks Mommy to “Give-it pencil,” and on the audiotape at 23 months she says “Give it to me.” These are the only recorded uses (except for *gave*; see next paragraph). Presumably, T never uses this expression widely as she had three other well-established expressions that served her needs adequately (*get, hold, have*).

She did, however, show a related use on 21.05 that would seem to

have had a unique function. Like her expressions with *made*, T began at this time to comment about an object that someone “gave” it to or for someone. This presumably was modeled on the parents saying that “X gave that to you.” One early example of this expression is “Aunt Lulu gave me boots” (22.05) said out of nowhere (her aunt had given her boots but they were not present). A month later, and all on the same day (22.07) T indicated six different objects and said things such as “Gramommy gave that for Mommy” about a doll her grandmother had given her, “Laura gave that for me,” “Timothy gave that necklace for me,” and “Mommy gave that cereal for me to eat.” One interesting mistake is T’s utterance during this same time period “Joe give that for you,” about a just completed witnessed event, which might indicate that *gave*, usually used without T witnessing the act of giving, was its own form at this time. (The status of *gave* as a past tense is discussed more fully in chapter 6.)

With the introduction of *have* and *give* into T’s vocabulary, introduction of the concept of possession is now justified, if not mandatory. First, T uses *have* and *gave* for states of possession; she has many other expressions to designate that an object is in a location if that was what she desired to express (e.g., “Umbrella with that girl” or such). Second, at around 18 months T begins expressing possession with two-term expressions of the form “Mommy’s pillow” and “My bottle,” which would seem to be clearly possessive. Third, it would also seem necessary to introduce the concept of possession to distinguish *have* and *give* (as requests) from *get* and *hold*, which involve object transfer but would seem to lack the concept of possession.

The conceptual situations underlying *have* and *give* are thus distinguished from *get* and *hold* in their later uses by their use of the concept of possession. *Have* would seem to be distinguished from *give* by its lack of specification of where the object originated (anywhere not in P’s possession, at location X) and how the person came into possession of the object. *Give* begins with the object in another’s possession and includes that person as the agent effecting the transfer. Representation of the conceptual situations underlying the use of these two terms is thus as follows:



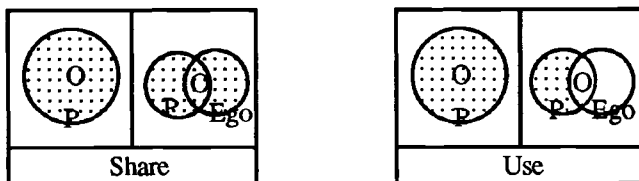
Note that because T uses both of these terms as comments on the possession of others as well as requests for herself, the use of *P* in the *have*

diagram is justified as a general designation of persons including T (she even comments that others give things to others). *P1* and *P2* are used in the *give* diagram simply to designate that two different people are involved (either one of which may be T). Also note that *have* as a state would be represented in the same way as the state uses of *got*, that is, two identical states with the object in the possession of *P*. (I cannot distinguish these two, but the two adult expressions “She has got the umbrella” and “She has the umbrella” are not easy to distinguish either.) *Gave* and the one use of *had* presumably refer to *give* and *have* actions in the past.

4.3.5. Share, use, keep, buy, and left

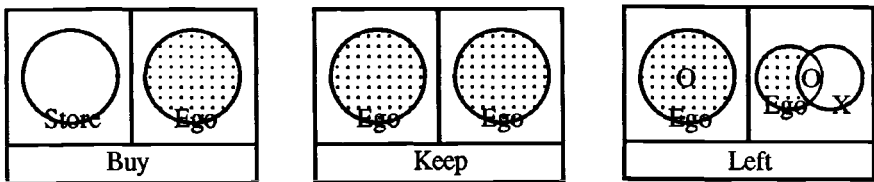
Related to these expressions are several infrequently used variations. First, the expressions *share* and *use* were learned at around 20 months. The three examples of sentences with *share* are “Share this pen” (20.01) asking for a pen Daddy is using, “Share me” (20.03) asking that Daddy share his milk with her, and “Share Maria’s coat” (20.19) asking Maria to share her coat. Closely related to this expression was *use*. T asked on some occasions to “Use-it,” and produced the one sentence “Use Maria’s necklace” (20.19) as a request. Although it is difficult to draw firm conclusions on the basis of so few examples, it would seem that both of these words were distinguished from *have* and *hold* in that T was not requesting in either case full possession. *Share* was used in cases where the possessor did not need to relinquish fully the object in order for T to “have” it also. Within one interaction (e.g., drinking milk or drawing pictures), both participants could control the object in question. The use of *use* might, as in adult language, imply that T wants full control over the object but only temporarily – she will give it back when she is finished using it.

Recognizing that the diagrams are underdetermined by the data in these two cases, we may represent the underlying conceptual situations of these two words in terms of two spheres influence, *P* and *Ego*. In the case of *share*, T wants *P* to transfer the object from her possession to a joint possession. In the case of *use*, T wants *P* to transfer the object from her possession to T’s location (not possession) while *P* retains possession.



A related but fairly specialized word is *buy*. After a trip to the store at 19.29, T comments as we unload the groceries “Buy this plum,” “Buy this sponge,” and “Buy this Weezer cat” (cat food). A day later, in a similar situation, she adds the name of the buyer “Daddy buy this” as we took a new record out of its wrapper (she had been at the store when we bought it). The three subsequent uses are all requests which add more information but do not specify the buyer: “Buy other kinds balloons” (20.19), “Buy popsicle now after that” (21.08), “Go seven-eleven buy more coca-cola” (21.27). As I assume that T does not understand about money transfer and the like, I will simply represent the conceptual situation in which an object is transferred in an unspecified manner from a store to her.

Another related expression was *keep* or *keep-it*. If someone else was trying to take an object away from T she would exhort “Keep-it” to let the person know that she had no intention of relinquishing it. T only used this as a single-word request after 20 months, and so the notes are very general; it appears that she only used it about herself, however. Finally in this subgroup, there is one recorded instance of T saying “Left my coat in Schaufele’s house” (21.11), presumably indicating a temporary dislocation of a possessed object. These three conceptual situations are represented in the diagram below (note that *left* depicts the case where T retains possession but the object is now located somewhere else):



4.3.6. Summary

Figure 4.3 provides a summary of the conceptual situations underlying T’s use of words for exchange and possession. After the early performative terms *thanks* and *here-go*, used to mark or comment upon object exchange, T begins to request that someone “get” her an object, that someone bring an object “back” that they had taken away, and that someone give her an object they are holding (“hold”). All of these words involved T or other people as sources or destinations for objects, but there was no compelling evidence that possession was involved (nor would it seem to be in the adult use of these terms). From 20 to 22 months, however, T acquires seven different expressions involving possession in some way. She could request or comment that someone “have” something, that they “give” something to someone, that they “buy” some-

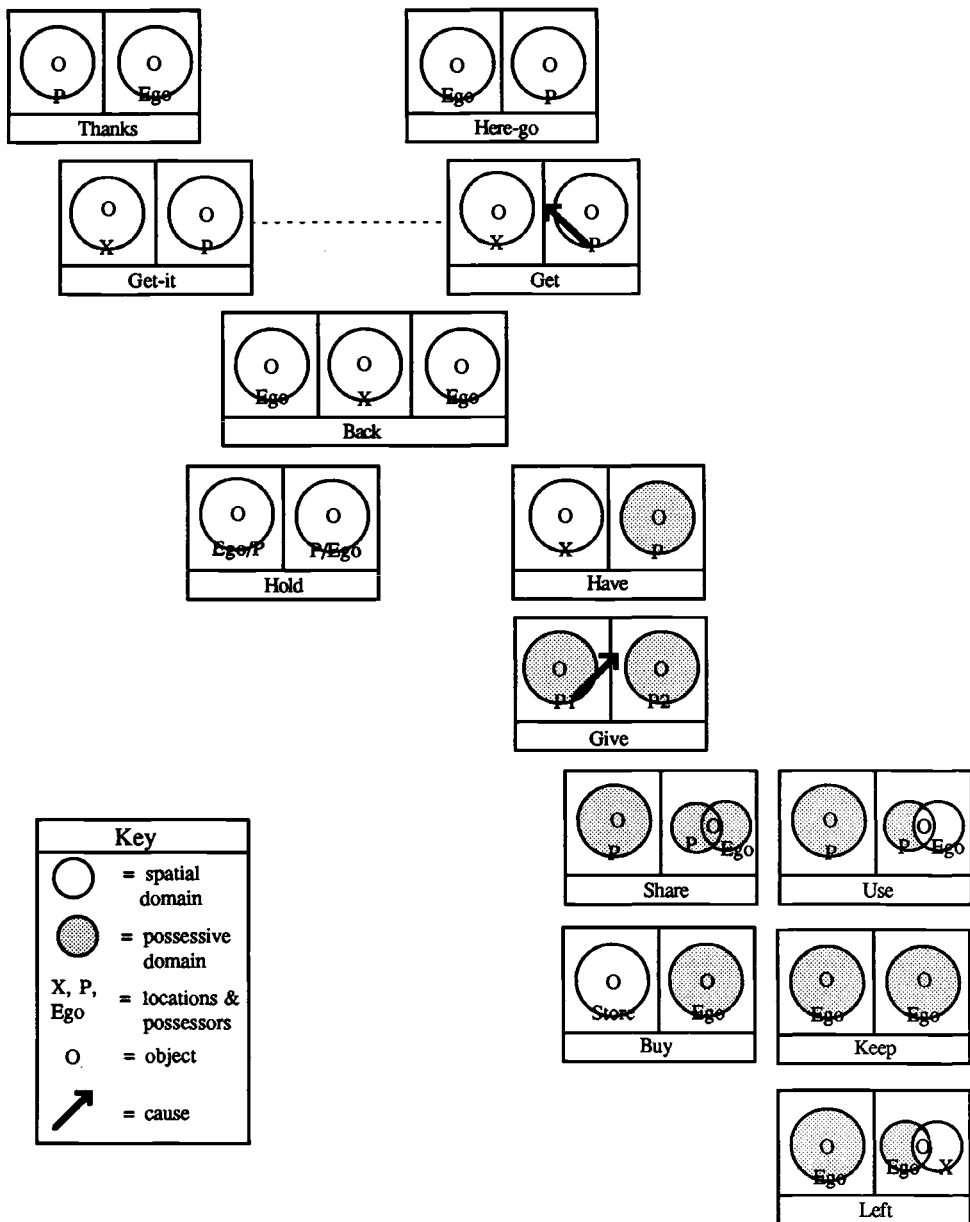


Figure 4.3. Conceptual situations underlying T's exchange–possession of object words.

thing, or that she be allowed to “share” or “keep” or “use” something, or that she “left” something somewhere. The past tense forms *gave*, *got*, and *had* all indicate that T could also refer to an outcome of several of these transformations. Further evidence for their status as possessives is T’s other expressions for possessives (e.g., *my*) emerging at this same time (see chapter 6).

In terms of syntax, summarized in Table 4.3, 3 of the 14 terms in this group were used as holophrases only: the performatives *thanks* and *here-go* and the request *keep-it*. In the early use of most of the rest of the exchange–possession terms, T again shows a preference for placing the object in the postverbal position – although there are some important exceptions, especially *get* (see next paragraph). This overall pattern holds for the relational word *back*, as well as for the verbs *hold*, *have*, *give*, *share*, *buy*, and *use*. In its later uses *back* becomes the adverbial that it is in adult language. The verbs *give*, *share*, and *use* all continue to express only one argument at a time (usually the object) throughout the course of the study. The verbs *hold* and *have* become involved in progressively more complex sentences involving two arguments. If the actor is expressed, it is in the preverbal position; if that same sentence has either an object or a location, it is in the postverbal position. If the sentence expresses object and location, they are in that order following the verb. (This also holds for the one sentence with *left*.)

Get-it begins its syntactic career in a more complex way than most other verbs, and becomes even more complex after that. In its early uses, the object precedes *get-it*; at around 18 months the preferred order reverses. T then goes on to express two-argument sentences, some with actor and object, some with object and locative, and some with object and a dative – all in their canonical ordering and some with appropriate prepositional marking. The later uses of *get* all involve other verbs and verb particles and will be dealt with in section 4.5 on movement. Finally, *gave* emerged at a surprising early age in full-blown sentences with the actor, object, and dative arguments always expressed. Like *made*, the reason for the expression of the actor in particular was presumably that that was the whole point of the utterance: to convey precisely who had given her something.

4.4. Location of objects

The words in this section in most cases function in adult language as names for places (the prolocatives *here* and *there*) or the designation of static spatial relations (the prepositions *in*, *on*, etc.). However, many of these functioned early in T’s language as action requests (e.g., “Out” meaning “Take out,” “Up” meaning “Put up”), and so they are consid-

Table 4.3. *Syntax of exchange and possession of object words as a function of age in months*

		16 - 18	18 - 20	20 - 22	22 - 24
<i>Get-it</i> (excluding use with verb particles)					
(22) object	pre	Bottle get-it	Pizza get-it		
(14) object	post	Get-it hat	Get the flowers	Get-it another one	
(1) location	post+prep		Get-it on steps		
(1) actor	pre		Me get-it		
(5) actor	pre		Mommy get sauce	Ms get people	I get it
+object	post				
(5) object	post			Get-it wagon porch	Get pillow on the floor
+locative	post-post+prep				
(3) object	post			Get raisins to me	Get that p-towel for me
+recipient	post-post+prep				
(8) Other				Come get me stuck	It gets heavy
<i>Got</i>					
(3) object	post		Got-it Weezer	Got the guide	
(1) object	pre		Ring got-it		
(3) actor	pre		Danny got me	Lady got umbrella	
+object	post				
(1) recipient	post+prep			Got for you	
(4) Other					Got to hold it
<i>Back</i>					
(3) object	post	Back salt	Back these		
(1) object	pre			Star back here	
+location	post				
(10) w/ Verbs				Come, Snap, Have, Put	Roll, Get
<i>Hold</i>					
(2) actor	pre	Mama hold			
(1) object	pre	Jello hold			
(44) object	post		Hold Weezer	Hold this M's n	Hold the chalk
(3) actor	pre			M hold my hand	I hold it
+object	post				
(2) object	post			Hold me in the lap	
+location	post-post+prep				
(3) w/ Verbs					Want, Got
<i>Have</i>					
(1) object	pre		Balloon have-it		
(6) object	post		Have-it cards	Have some my p	
(7) actor	pre		D have this wallet	P have those spoons	I have the chalk
+object	post				
(4) object	post			Have juice in my b	Have p-butter in it
+location	post-post+prep				
(4) Others				Have one too myself	Have more again
				Have that back	Have Mommy fix it
<i>Give</i>					
(1) recipient	post		Gimme me		
(1) object	post			Give-it pencil	
(1) object	post				Give it to me
+recipient	post-post+prep				
(1) Other					J give that c for you

Table 4.3 (*cont.*)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Gave</i>				
(1) actor	pre			
+recipient	post		A L gave me boots	
+object	post-post			
(6) actor	pre		T gave that n for me	
+object	post			
+recipient	post-post+prep			M gave that cereal for me to eat
(1) Other				
<i>Share</i>				
(2) object	post		Share this pen	
(2) recipient	post	Share me		
<i>Use</i>				
(2) object	post	Use it	Use M's necklace	
<i>Buy</i>				
(4) object	post	Buy this plum	Buy other kinds b's	
(1) actor	pre	Daddy buy this		
+object	post			
(2) Other		Buy Weezer cat	Buy p now after that	
<i>Left</i>				
(1) object	post			Left my c in S's house
+location	post-post			

Note: Thanks, Here-go, and keep were used as single word requests only. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

ered sentence-structuring verbs. Most of the words in this section go on to function later in the course of the study, as in adult language, as verb particles and prepositions. In the current section I treat T's use of these words as verbs. In their uses as verb particles and prepositions they are discussed as necessary along with the main verbs of the sentences they serve to complement (mostly in the section that follows on movement of objects; see also Tomasello, 1987).

The words analyzed up until now fall into groups in which the only depicted relations were perceptual presence-absence or spatial-possession collocation, and these were basically the same for every word in the group. The underlying conceptual situations of the terms in the current group, however, differ from each other more fundamentally because they themselves refer to different spatial relations. This requires the introduction of a variety of new iconic representations involving the depiction of surfaces, containment, directions, and so forth, which will

be introduced as needed. In the formal representations, I depict only the final step of the sequence for each word. That is because the words are presented in opposing pairs, and the first step of each sequence in its verblike use is the opposite state: The first step of *off* as a verb is something that is “on.”

4.4.1. *Up and down*

Shortly after 17 months, T learned to request “Up-here” when she wanted to be picked up or to be placed up on something and as a comment on her own activity of getting up (e.g., on couch, bed, high chair). She soon began using it also to request or comment on objects being placed on things. (Adult glosses would thus be something like “put up” or “get up.”) T’s first combinations reflected this focus on herself, for example, “Up-here lap” (18.05) wanting to be up in Mommy’s lap and “Up-here bed” (19.21) wanting to be up on the bed. She soon began using it with objects, however, for example, “Up-here silk” (19.26) as she places her silk on the couch and “Up-here this fork” (20.08) as she places her fork on the counter. On two occasions she used another ordering for these same functions “Crayon up-here” (19.10) as she placed it on the counter and “Car up-here” (19.29) as she climbed up in it. In the 20- to 24-month period, T began using *up* as a verb particle with some verbs in identical situations (e.g., *put up*, *pick up*, and *get up*), thus providing further evidence that the early use was indeed as a verb-like relational word. T also used *up* as a verb particle in other situations: *eat . . . up*, *cover . . . up*, *lick . . . up*, *drink . . . up*, and *pull up*. These seem less closely tied to the vertical component that is central to the meaning of *up* in most contexts.

In close parallel to the earliest uses of *up*, T learned to request *down* to be put down from the arms of a parent shortly after 17 months. She soon generalized it to a comment on her own activity of getting down. Her first combinations all involved objects, and, for the most part, dealt with either herself or someone else putting down an object. Thus, “Peter down” (17.26) as a request that Mommy put down a book, “French-fries down” (18.01) as a comment on her action of putting them down, “Towel down” (18.01) as Mommy is trying to get a towel down from a shelf, “Tiger down” (18.19) as she pulls a tiger towel off the bed, and “Two rugs down” (19.01) as she puts them down on the floor. In two cases, T used the reverse order and said “Down toy” (19.18) and “Down this right here” (19.16) as she was putting things down. *Down* in the first position typically indicated the location where something was to be placed, for example, “Down table” (19.11) asking that her juice be put on the table so she can get it, “Down grass” (19.15) asking that she be put on the

grass, "Down here ground" (19.29) as she places glasses down, and "Weezer down here" (20.01) as she places the cat on the floor. In only one case did T mark the locative relation, "Down on couch" (19.15) as she placed her plate on the couch. In one case T did not follow this canonical ordering. She said "Down toy" (19.18), placing the object in the postverbal position.

The formal representation of these two words thus depicts the simple fact that an object, including herself (in fact she began with herself) is above or below herself (*Ego*) as a landmark object. Thus T could either ask that she be picked "Up," changing her location from where it is now to somewhere above it, or she could put an object up, relative to her own location.



Beginning at around 18 months, T began using three-term expressions specifying both the object to be put down and where it was to be put. For example, "Cereal down rug" (18.31) as she puts it down, "Coffee down table" (19.09) as a comment on Daddy's action, and "Piece-of-ice down here table" (20.15) as she puts it down. Only one such expression marked the spatial relation explicitly, "Bear down in the pee-pee" (21.21) as she placed the bear in the pee-pee. Two sentences did not follow this canonical ordering, the first of which was "Down this right here" in which the object is in the postverbal position. The use of *down* as a verb particle with *get* and *put* during the 20- to 24-month period (to be discussed) was in similar situations to those using only *down*, thus providing further evidence that the early use of *down* was as a verb. It was also used as a verb particle in other situations with *fall*, *lay*, and *push*.

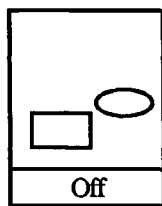
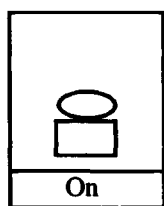
4.4.2. *On and off*

As discussed previously, T used *on* and *off* in connection with various machines (see section 4.1.5). But her earliest use of these terms (18 to 19 months) was in locative situations, especially as holophrastic requests to put clothes and related items "On" and to take them "Off." (T's parents had asked her things such as "Do you want to put this on or take this off?") Her first combinations with the verblike uses of these words

were “On head” (19.10) as a request to be placed on Daddy’s head and “Necklace off” (18.19) as a request that it be taken off her. T’s immediately subsequent uses of *on* were “Nightgown on” (19.13) as a request, “Helmet on” (19.16) as a request, and “Ring. . . Finger on” (19.19) as a request to have the ring on her finger. On some occasions she specified the location “On table” (19.29) as she was placing cans on the table. The vast majority of her combinatorial uses specified both the object and where it was to be put: “Grover on there” (19.26) as a request, “Hat on there” (20.04) putting the crown on an acorn, and “Glasses on me” (20.22) as a request.

Off was used in a similar manner. On 24 occasions from 18.19 to 19.29 T produced requests of the form “Necklace off” (18.19), “Paper off” (19.15), and “Duck shirt off” (19.28). At 19.05 she requested “Chicken off hands,” five days later she requested “Peas off table,” and at 21.02 she said “Leaf off my sock” as she was taking it off. The majority of T’s complex sentences with *off* come in its use as a verb particle in constructions such as *get off*, *take off*, *come off*, and *wipe off* (see next section).

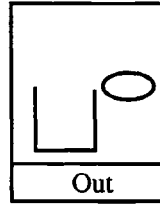
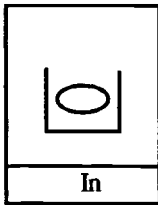
The formal depiction of *on* and *off* thus depict in iconic form the prototypical situation in which an object is resting on the surface of another. A number of individual utterances do not fit this precisely (e.g., “Potato on fork” as it is impaled on it), but the diagrams below are meant as the earliest and most central uses.



4.4.3. In and out

From its first uses *in* was used with *put* and thus there are no verblike uses of *in*. On the other hand, *out* was used very much like *off*. T’s first combinations were “Out this” (18.25) as she struggled to get out of a box, and “Out eyes” (19.07) as a request to help her get something out of her eyes. All of her subsequent verblike uses specified the thing to be taken out, for example, “Pen out” (19.08) as she struggles to get the pen out from under the refrigerator and “Money out” (19.18) as she takes it from a small box. There is one entry in which she specifies both the thing to be taken out and where it is to be extracted from: “Rubber-band out mouth” (20.19) as a request. Her other verblike uses are as a verb particle in constructions with *get out*, *come out*, and *take out*.

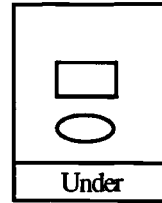
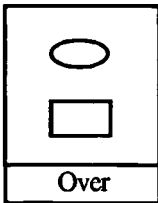
With the same caveats as those already expressed for *on-off*, the prototypical in and out situations are formally depicted as:



4.4.4. *Over and under*

Over was used as a locational word from the beginning, for example, “Nini over-here” (19.11), and was not used in a verblike way. *Under* was used in a verblike way on only three occasions: “Under here” (19.23) as she is pushing a chair under a table, “Mommy under” (19.30) as a request that Mommy go under the covers, and “Mommy under house” (20.00) as a request that Mommy get under the house (table). Neither of these words was used in verb particle constructions, although they were used in prepositional phrases with several movement verbs.

This pair of spatial terms is obviously related to *up* and *down*, but *over* and *under* always designate the static relation between two objects (one of which may be T) rather than any locations relative to ego.



4.4.5. *Here and there*

At around 19 months of age T began using the prolocatives *here* and *there* in sentences (almost never alone). Many of the early sentences with *here*, however, had no other relational word; in adult language they would have had some form of the copula. For example, T says such things as “Cream sandwich here” (19.01), “Right here mosquito bite” (19.12), “Here this pen” (19.20), and “Maria’s umbrella here” (20.06). Of T’s 52 sentences with *here*, 16 are of this form. More frequent are sentences with other locative or action words that accomplish the structuring, for example, “Stay here rug” (19.15), “Down here grass” (19.22), “This ball under here” (19.22), “Down here ground” (19.29), and “Get me off here” (20.23).

T had only two sentences with *there* that had no other location or action word. One was her very first sentence with *there* "Water there" (19.16) and the other was a bit later, "Hole there" (19.27). Subsequently her use was very much as the use of *here*, that is, she produced such sentences as "Put it in there" (19.21), "Bugs in there" (19.22), "Marshmallow stuck on there" (20.01), and "See that right over there" (21.16), in which other words do the structuring. Even more than for *here*, almost all of T's uses of *there* involved combinations with the spatial oppositions *up-down*, *in-out*, *on-off*, and *over-under*.

The conceptual distinction between *here* and *there* was presumably very similar to that of adults: *here* was somehow more closely tied to a frame of reference close to T and *there* was some distance away from her own location. Note that this is often a psychological attitude more than a physical distance, as T would often say things like "Toys in there" (20.07) pointing to toys in a box when she might just as easily have said "Toys in here" depending on her attitude toward the box.



4.4.6. Summary

For many of T's uses of these locational words, it is the locational word that is structuring the sentence (e.g. "Out eyes," "Bug on monkey bars"). It should be mentioned that T also created some sentences in which a locative relation was implicit – sentences of the "Ball table" (when the ball is in fact on the table) variety. These will be dealt with along with other object-object constructions in chapter 6. Also, there are a few sentences with other spatial prepositions that T used only in a static mode and without other verbs (*around*, *next to*, *together*, *by*, and *at*). These were relatively infrequent and will also be dealt with in chapter 6.

Figure 4.4 summarizes the conceptual distinctions implicit in this group of spatial oppositions. To summarize briefly, early in her language development T learned the four polar oppositions: *up-down*, *on-off*, *in-out*, and *over-under*. All except *over* and *under* – which were mostly location names from the beginning – began in the context of some concrete activity or activities involving T's own body or objects she was interacting with directly. Only later do they come to function, in combination with

16 17 18 19 20 22 24

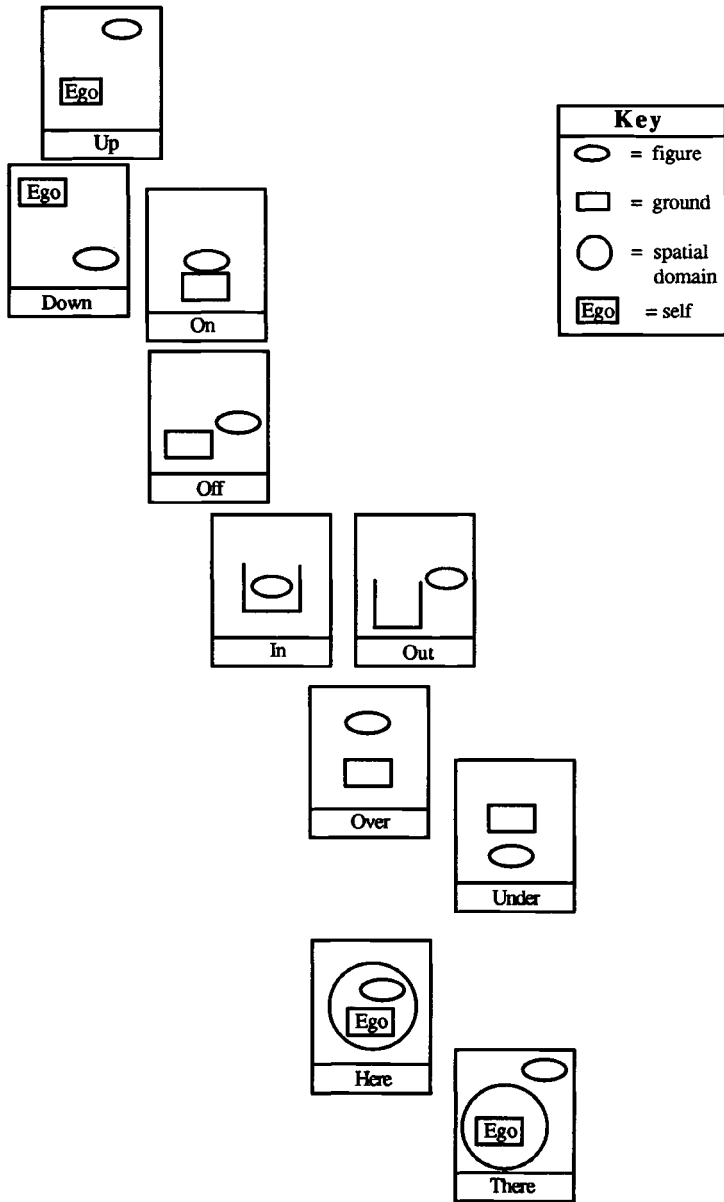


Figure 4.4. Conceptual situations underlying T's location of object words.

other verbs, to specify static locative relations. *Here* and to a lesser extent *there* are used to request or indicate a specific but unnamed location.

The syntax of the four pairs of spatial oppositions in their uses as verbs is very consistent (see Table 4.4). Across all eight of these words, there are 188 instances in which the object is in the preverbal position, the location is in the postverbal position, or both. There are only 9 exceptions to this: 4 with *up-here*, 3 with *down*, and 2 with *on*. *Here* and *there* are not consistent, even when they are used in a predicatelike way. The more complex syntactic constructions in which these words participate all involve other verbs as the major sentence structuring devices; they are thus discussed in the context of the main verbs (mostly in the next group concerned with movement).

4.5. Movement of objects

The words falling into this general category all involve objects (including the self) changing or, in some cases, not changing location. The formal conventions used for these words are simply: objects, causal agents, and locations. All of the words use *O* to designate objects in general. In some cases this refers to T's own body as well; these are indicated in the text. Locations are designated as before in terms of spatial domains, including ego as one possibility. The one new convention is the use of empty quotation marks to deal with words that take verb particles. Thus *take* has a different terminal location of the object movement depending on whether T wishes to take something *out*, take something *off*, take something *down*, and so forth. This convention will be explained as it is introduced.

4.5.1. Stuck

One of T's earliest relational expressions was *stuck*. T's parents would ask her as she struggled to extricate herself from somewhere, "Are you stuck?" We also sometimes asked her if her bottle of juice was "stuck," meaning stopped up. T's early single-word usage occurred in a wide variety of obstructed-movement contexts, including her foot is stuck in the baby carriage (15.18), juice is stuck in the bottle (15.19), a wallet will not open (15.22), a faucet will not turn (15.24), tape will not come off her hand (16.02), she cannot lift a brick (16.18), she cannot get her hand into a baseball glove (16.20), she cannot get herself down from a high chair (17.00), and she cannot open the door (17.07). The video at 17.25 contains several similar examples: She cannot stir blocks in a bowl, lift a chain, get a scarf off, and so forth.

Table 4.4. Syntax of location of object words as a function of age in months

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Up</i>				
(8) location	post+prep			Up there in the sky
(1) location	pre	Up-here lap		
(3) object	pre	Car up-here		
(4) object	post	Maria up-here		
(1) object	pre	Up-here silk	Up-here me	
+location	post	Weezer up-here tree		
(18) w/ Verbs			Drink, Eat, Lick, Cover, Pick, Put Get, Ate	
<i>Down</i>				
(22) object	pre	Boy down	Pen down	
(1) object	post		Down toy	
(7) location	post+prep		Down on couch	
(9) object	pre		Cereal down rug	B down in the p-p
+location	post+prep		Down this right here	
(2) object	post		Drop it down	Draw on p-plate down here
+location	post-post			Lay, Fall, Get, Put, Push
(14) w/ Verbs				
<i>On</i>				
(7) object	pre		Cake on	
(6) location	post		On head	On my face
(2) location	pre		Finger on	
(32) object	pre		B on monkey bars	Milk on my face
+location	post+prep			Sand on my eye
(2) Other				On there me B on me in the eye
<i>Off</i>				
(31) object	pre		Necklace off	
(14) object	pre		Chicken off hands	Leaf off my sock Get, Take, Wipe Came
+location	post			
(16) w/ Verbs				
<i>In</i>				
(1) object	pre		Spoon in	
(4) location	post		In there	In Mama's car
(22) object	pre			Other b in the bush
+location	post			In my nightgown There's rocks in there
(3) Other				What happened in there
<i>Out</i>				
(9) object	pre		Tape out	
(1) location	post		Out this	
(1) object	pre			R band out mouth
+location	post			
(14) w/ Verbs			Get, Sticking, Came, Falling, Coming	

Table 4.4 (cont.)

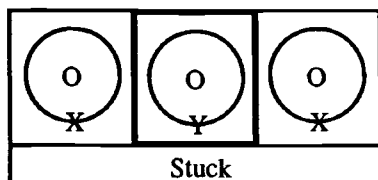
	16 - 18	18 - 20	20 - 22	22 - 24
<i>Over</i>				
(3) object pre		Matches over here	That's D over there	
+location post				
(1) location post			Over here N-School	
w/ Verbs				Turn the record over
<i>Under</i>				
(3) location post		Under car		
(1) object pre		Mommy under		
(4) object pre				
+location post		Poker under car	B book under there	
(1) Other			What's that under here	
<i>Here</i>				
(8) object pre		Cream-s here	M's umbrella here	
(10) object post		Here this D's hat		
<i>There</i>				
(2) object pre			Water there	

Note: Excluded are use of these words as prepositions or prolocatives. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

T's earliest combinations with *stuck* do not show a consistent word-order preference. She begins with "Baby stuck" (17.16) about herself on the counter, proceeds during the months that follow to prefer the opposite order (e.g., "Stuck pillow," "Stuck bottle"), and has a period where both orders are used interchangeably (19 to 20 months), although sentences beginning with *stuck* outnumber those beginning with the thing stuck 8 to 2. In a few cases, she specifies what is stuck with a short phrase, for example, "Stuck this Weezer-pillow" (18.31) and "Big rock stuck" (19.05). At 19.13 she leaves out the thing stuck and instead specifies where it is stuck: "Stuck on bowl" about a bubble that is clinging to a bowl. In one case after 20 months, T produced sentences in which both thing stuck and location are expressed. At 20.01 she said "Marshmallow stuck on there" (to a marshmallow impaled on a moose's horns in a picture). A day later she says "That string's stuck," which supplies the obligatory copula for the first time and thus uses stuck as the participle that it is in adult language.

The conceptual situation underlying T's use of *stuck* may be represented as a sequence in which an object is in a particular location, T wishes it in another location, but it remains in its original location. It is possible that her own attempts to move the object should be represented

as well in her early uses, but because this is not necessary to distinguish it from other words – and because her later uses do not include this element – I chose not to include it.



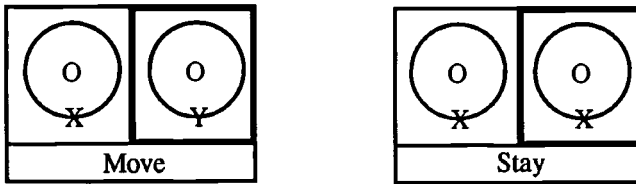
4.5.2. *Move and stay*

At around T's 16th month, her parents would often tell either her or the dogs to "Move!" from underfoot, especially when they (the parents) were carrying something or the obstructing individual was in a doorway (we were moving some furniture at the time). During the 5 days from 15.26 to 15.30, T uses the single word "Move!" to tell the dogs to get out of her way (they are in the doorway), to tell the dogs to leave her alone (they are licking her), to tell herself to get out of her mother's way (mother is carrying an ironing board), to tell the vacuum cleaner to get out of her way (it is in the doorway), and to tell Daddy to get out of her way (he is blocking access to a toy). Three weeks later, she exhorts some weeds to "Move!" (16.23) as she tries to get through them. Two months later (18.25) T produces her first combination "Move broom," seeming to address the obstructing object, not a person. Her subsequent combinatorial uses seem to be as comments on her own activity (or exhortations to herself), for example, "Move brush" (19.01) as she does so, "Move towel" (19.02) as she does so, and "Move Daddy tray" (19.03) as she does so. When she wishes a person to move, she tells them "Move, Mommy" (19.04) or "Move, Carol" (19.19) with an imperative intonation. The only video example is the request "Move, Maria" on the 19.26 tape. T's only use of *move* with another nonnominal expression is "Move pajamas off chair" (20.17) as she does so.

During this same period T's parents would also on occasion tell the dogs to "Stay!" especially as we opened the house or car door to get out (and they were supposed to stay inside). We also would sometimes ask T, as one parent was leaving for somewhere, if she wanted to come or to stay. Between 16.24 and 17.14, T told the dogs to "Stay!" as we exited the car, as we left in the car (and they were to stay in the yard), and as we exited the house. At 19.19 and 19.20, T appends the names of the dogs "Stay Pete!" and "Stay Cinnamon!" At around this same time a new use of this term also emerges. At 19.15

she says “Stay here rug” to tell her parents not to take the rug outside, at 19.17 she says “Stay here” to indicate her desire not to accompany a parent in the car, at 19.19 she says “Stay here breakfast” to indicate that she does not want the table cleared, and at 24.28 she says “You stay right there.”

Despite the changes in the way these terms are used across the early developmental periods, the common conceptual situations in their uses across time (always as requests) may be represented most generally as follows:



Note that *stay* requires two time points at the same location to indicate that indeed the object must remain for some duration beyond one moment of attention.

4.5.3. Go, come, and come-off

T’s parents used the word *go* in several contexts early in her development. They would say “Look at that go!” when something went by (especially if it was fast); they would say “Let’s go” as they were leaving (especially if T was slow to respond); and they would say of her friend “She has to go” at leaving time. T’s first two single-word uses, at 17.04 and 17.06, were comments on the passage of a fast car and a jogger going past. At 17.27 she comments “Go” as we are leaving in the car, and at 18.26 she exhorts her parents to “Go,” meaning to leave now. T’s only early combination is the comment “Maria go” (17.14) as her friend leaves for home. Later, during the 22- to 24-month period she produces: “Go seven–eleven buy more coca-cola,” “Go by there,” “Go to bed,” “Go to _____ house,” “Go to store,” and, at 25 months, “I go outside talk to Maria.”

In the period between 17 and 20 months, T learned four holophrastic requests with the root *come*: *come-here*, *come-on*, *come-back*, and *come-in*. When she wanted to call (beckon) either people or the dogs, she would say either “Come-here _____” or “Come-on _____”; the only combinations during this period are with the name of the addressed person or animal. Also, at around 20 months, T learned to scream “Come-back” to people and dogs when they were leaving against her will; there are no combinations with this expression during this period. In a related expression, when someone came to the door, T would cry out “Come-

in." She generalized this to include any passage through a door, and this led to several combinations prior to 20 months: "Come-in outside" (19.05) when she wanted to go through the door to the outside, "Come-in too" (19.10) wanting to accompany someone, and "Maria come-in" (19.14) wanting her to.

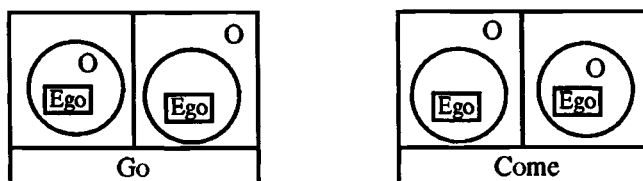
In the period from 20 to 24 months, T produced several more combinations with *come-in*: "Birthday-cake come-in too" (19.31) wanting to bring it in, "Umbrella come-in too" (20.01) bringing it into the playhouse with her, and "Bottle come-in too" (20.04) asking to bring in her bottle. During this later period she also produced two sentences with *come-on* that evidenced a new exhorting meaning: "Come-on Mommy shirt off" (20.06) as a request and "Come-on sit me" (20.28) wanting Maria to sit with her. She also produced "Mommy come-on in living-room" (21.03) as an elaboration of the former spatial beckoning meaning. During this later period *come-back* was also placed into sentences on three occasions: "Come-back here popcorn" (20.24), "Come-back here" (22.03), and "Come-back here see Flintstones" (22.03).

During the 23- to 24-month period T used *come* in combination with *with-me* constructions: "Dog and Kitty come with-me in the airplane" as a request, "Pete come with-me in the grocery store" as a request, and "Clouds coming with-me" as a comment. Two other sentences with spatial prepositions produced during this general time frame were "Come up there" (22.07) as a request for Daddy to join her (an adult would have said "here") and "Come out Max" (24 months) inviting the dog outside. Also during this period T comments "Smoke coming out the coffee" (22.07), with two other sentences of this type a month later. Finally, T also produced two sentences in which *come* played the role of matrix verb: "Come get me stuck" (20.27) and "Come help me" (21.02).

Seemingly unrelated to these uses of *come*, during the 22- to 23-month period T produced four sentences with *came-off*: "Came-off Grover" about a string she broke off a toy, "That came-off rug" about some yarn that came off a rug, "That thing came-off corn" and "That came-off corn" about a kernel of corn. There was one variant of this pattern: "Came out silk" about a string that came off of her silk blanket (called "silk").

The two-root words *go* and *come* thus were used in a variety of ways. The most general commonalities, however, may be depicted quite simply. In the case of *go*, the movement was always away from ego, and in the case of *come* the movement was toward ego. I thus use *here* and *there* to designate, as they do in adult usage, places relatively closer to and relatively farther away from ego. *Came-off*, like many of T's early past-tense forms (e.g., *made*, *gave*, *broken*), is used

for an object that is in some sense thought to be a result of a past action – in this case one of coming off of another object (i.e., off the object and toward ego).



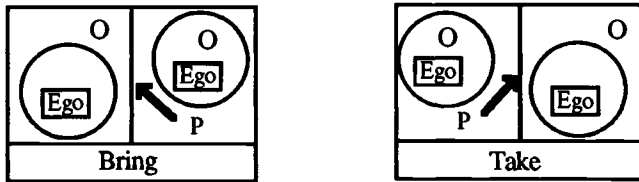
4.5.4. Bring and take

During the period from 19 to 20 months, T's parents would ask her to "bring" them things. Often, T would oblige, commenting on her own behavior "bring" as she did so. At 18.03 she adds the name of the thing being brought "Bring chair" as she is bringing it into the room. At 20.06, T requests of her father "Bring milk" and "Bring jelly now," and on that same day comments about her father "Bring salad" as he is doing so. Later T adds the name of a location as well as the thing being brought: "Bring this Weezer-pillow up-here" (20.14) as she climbs into Mommy's lap and "Bring her in there" (22.07) wanting her friend to be brought into where she is (an adult would have used "here").

At around 20 months, T also began using *take*. The major context was when she could not find something she would say, for example, "Daddy take a da bottle" (19.28) and "Daddy take bottle school" (20.13). But an indication that she meant by this actual transport (and not something like "made disappear") is the utterance at 20.03 "Daddy take to Maria's" as a request that he transport her and "Take Fred outside, Lucy too" (21.05) as a request. She also produced one sentence with the idiomatic "Take a temperature butt" (20.11) in anticipation of the event. Two other complex sentences with *take* were "Take more first" (22.04) wanting more food before we put it away, and "Take this away and put it on the table" (24 months) while she does it. T also used *take* in complex sentences with such verb particles as *out* and *off*, but discussion of these will be delayed until the following section on *put* and *get*, which both have similar structures.

The conceptual situations underlying the two expressions *bring* and *take* thus involve someone actively transporting an object. In the case of *bring* the destination is in some sense the location "here," and not T herself as when *get* is used. For example, when T asks someone to "get" the milk, she wants the destination to be herself. When she

asks them to “bring” the milk, the physical act is the same, but her intention would seem to be simply that the milk be transferred to a location in her vicinity (e.g., on the table). Note also that to distinguish these from *come* and *go* (analyzed in the previous subsection), there must be an actor that effects the transfer from here to there or vice versa. *Take* is used in sentences with an expressed actor from 19.28, whereas *bring* never does because T herself is always the bringer. The conceptual situations underlying these two expressions may thus be represented:



4.5.5. *Put, get, and take plus particle*

In the period between 17 and 18 months T began asking to “Get-out” (“Geout”) when she was stuck somewhere: in the playpen, stroller, car-seat, trashcan, bed, lap, and on Daddy’s shoulders. This would seem to be completely unrelated to her form *Get-it*, used as a general request for objects (and discussed previously). The earliest uses were all about her own body, with the one exception at 17.17 when she wanted a barrette out of her hair. During the 18- to 20-month period, T said “Pete get-out” as the dog was whining to go outside and “Weezer get-out” as a request that the cat get out of the sink. She also produced “Get-out kisses” as she unwraps a candy. “Get-out this” as she extricated herself from a box was the only example of her verbally specifying the thing gotten out of during this early period. At 17.19 she says “My get-out” wanting off the bed, at 19.17 she says “Me get-out” wanting out of her high chair, and at 20.17 she says “Get-out me” wanting out of a truck. At 21 months T finds the correct ordering of the thing being extricated and the place extricated from by placing the object name between *get* and *out*: “Get me out there” (21.00) wanting out of a shopping cart and “Get me out of my bed” (21.22) as a request. At 24 months, T says “You get your cigarettes out of here.”

At 19.24, T first requested “Get-off” wanting help off her bicycle. She then proceeds to request “Maria get-off there” (19.24) wanting her friend off a toy, “Get-off there” (19.31) as a request that she be taken off Daddy’s shoulders, and “Weezer get-off Daddy’s rocking chair” (20.15). At 20.22 she splits the elements of the periphrastic verb for the first time with “Get me off” wanting off the swing, “Get

the silk off" wanting her blanket off her, and (a day later) "Get Mommy's pants off" removing them from the couch. In three sentences she specifies both the item to be removed and its location: "Get me off here" (20.23), "Get me off there" (20.29), and "Get these pickles off my hamburger" (22.04).

At around 20 months, T asks to "Get-down" (as a single-word request) from Daddy's shoulders and from the bed. Two weeks later she asks an adult to "Get down this book" and to "Get down me." She never uses *get-down* in the adultlike way of the other periphrastic constructions with *get* – she never splits the constituents – but she does produce at 20.22 "Get me up there" as her only construction with *down's* polar opposite. Rounding out her uses of this most complex and variegated of her verbs, near the end of the period of study, T also produced the complex sentences "Get your paper back on your lap" (23.25) and "Get this away on my guitar" (23.25) as a request that paper on her guitar be removed.

From her first use at 19.16, all of T's 44 sentences with the verb *put* occur in conjunction with a verb particle in the form of a spatial preposition. All but 2 are requests beginning with the word *put*. Prior to 20 months, T does not split the verb and its particle. Thus, in the 2 weeks prior to 20 months, she produces: "Put-it in" as she is putting binoculars in a case, "Put-it on ring" wanting to, "Put it in there" wanting to put ice in a glass (and another time putting paper in a glass), and "Put on Mommy's shirt" as a comment on an activity. From 20 months on, her major use of both *put on* and *put in* is in adultlike requests with a split periphrastic verb. Thus, "Put Grover on there" (20.01), "Put hat on these feet" (21.00), "Put my new coat on me" (21.17), and "Put my shoes back on" (21.29). Similarly, "Put spoons in there" (20.19), "Put Weezer in the outside" (21.12), and "Put me in the shower" (21.21). For each of these constructions there was one example where the one doing the putting was linguistically specified: "Daddy put a new pajamas on" (20.07) after he had put them on her, and "Mommy put it in the window" (21.24). There was one apparent mistake as T says "Put new pajamas off" (21.15) – even though she was perfectly capable at this time of saying "take off." There is also one example of the present participle as T says "Putting spoons in there" (20.19) as she does so.

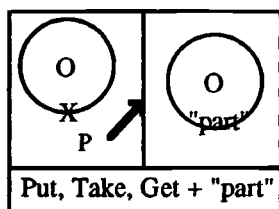
The other uses of *put* with a spatial preposition are less clearly true periphrastic verbs, but nevertheless T did produce five sentences with *put . . . up*. For example, "Put that up" (21.05) as she does so on a shelf, "Put up sky" (21.08) as a request to be lifted, "Put raisins up there" (21.10) as she does so, "Put that bottle up there" (21.10) as she does so, and "Put it up there by the window" (22.04). Three other utterances exhaust T's use of *put*: "Put my toothbrush down" (22.02) as she does

so, "Put it back" (22.04) as she returns an orange to the shelf, and "Put the nine by the letter M" (23.25) as she does so on a magnet board.

As alluded to, from around 20.20 almost all of T's sentences with *take* also contain either *off* or *out*. There were 10 sentences with *off*, in one of two forms. On the one hand there were "Take this key off" (20.23) wanting the key out of the door and "Take this paper off" (21.3) peeling a crayon. On the other hand there were also sentences that specified the location of the item to be taken off as well as the item itself: "Take that belt off me" (21.01), "Take skin off hot-dog" (21.04), and "Take that off there" (22.02). With *out*, T produced three sentences: "Take these things out Daddy's office" (20.28) taking things to Daddy's office, "Take these paper-towels out of cabinet" (22.06) as she does so, and "Take these out" (23.00) taking her feet out of her pajamas. T also produces one apparent mistake: "Take the paper in the garbage" (22.07) as she puts it in.

Get + particle, *put* + particle, and *take* + particle constructions are closely related in the senses of interest here, that is, their use with the spatial prepositions *up*, *down*, *in*, *out*, *on*, and *off*. In adult English, we combine *put* only with the "positive" poles *up*, *in*, and *on*; we combine *get* and *take* with the "negative" poles *down*, *out*, and *off*. *Put* and *take* are quite clearly opposites in this context, but that opposition is expressed in large part by the verb particle involved. Thus, it would seem logical to have one verb with which one could say something like "put it in" and "put it out" – as T does on one occasion. In any case, I will formally represent the conceptual situations of these verbs as already alluded to. I use the same diagram to represent all three of these words in their verb-particle construction uses, designating the destination of the object transfer as "part" and thereby placing the burden of discrimination on the verb particle used. (It should be noted that *get* is a bit different from the other two in that it would seem to imply that the terminus is somehow relevant to ego. Thus, if I ask someone to "Get it out" versus to "Take it out," the difference seems to be that in the former case more than the latter I wish myself to end up with the object. This is consistent with T's use of *get-it* in which ego is always the terminus. These new constructions are thus probably some combination of the two originally different expressions *get-it* and *get-out*. In any case, the subtleties of the differences between *get* + particle and *take* + particle constructions are beyond my powers of discrimination and so are represented similarly.)

The formal representation of the conceptual situations underlying all three of these verb + verb particle (*part*) expressions is thus (with differences coming in which verbs are combined with which particles):



A more detailed look at the development of expressions using verb-particle constructions (these and several others) may be found in section 6.2 on verb morphology.

4.5.6. Summary

Figure 4.5 summarizes the conceptual situations underlying T's words for the movement of objects. Three of her earliest expressions in this group are *stuck*, *move*, and *stay*, all of which concern the movement of objects relative to T's desire for where they should be: *move* indicating T's desire that an object move, *stuck* indicating its recalcitrance, and *stay* indicating her desire that an object not move. *Come*, *go*, *bring*, and *take* all refer to object movements toward and away from T, as in adult language, with the latter two requiring an actor to effect the transfer. *Put* + particle, along with *get* and *take* + particles, refer to the cases where an actor transfers an object to a location specified (either positively or negatively) in general terms by the verb particle accompanying the verb (*on*, *off*, *on*, etc.).

The syntax of T's movement words is summarized in Table 4.5. As a group, these verbs show more complex syntax than the other groups. This is in large part because they are all verbs (one past participle) in adult language. *Stuck*, *move*, *stay*, and *go* are all used in fairly immature ways throughout the early months, with some indications during the 20 to 24 month period that they are beginning to be used in more adultlike ways. Early in their use, the last three of these (along with *come*) show consistent ordering of the object in the preverbal position and location in the postverbal position. *Stuck* is very inconsistent in its ordering scheme until around 20 months. *Bring*, *take*, and *put* are learned later and are used in more adultlike ways from the beginning. *Come* and *get* are two of the most complex verbs T uses, with both showing a variety of morphological forms and sentence patterns.

4.6. State of objects

The final group of words in the change of state category all concern changes of state within an object. That is to say, whereas all of the other

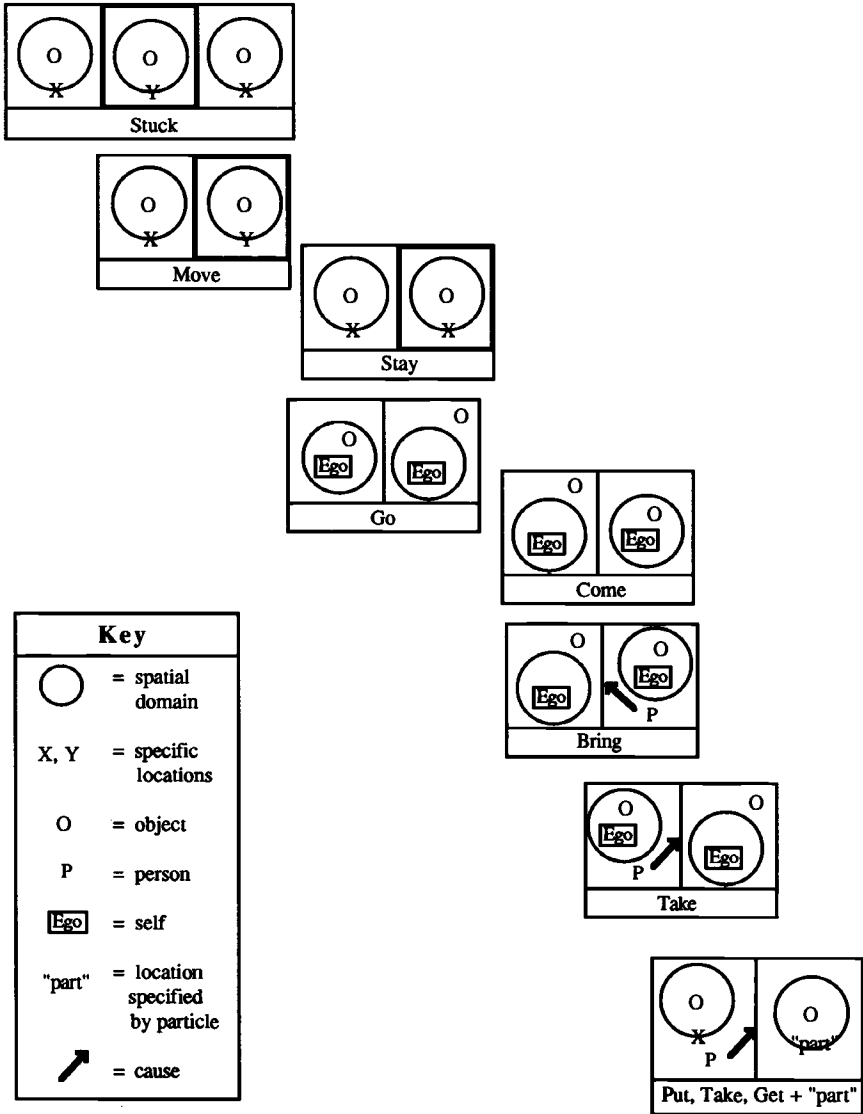


Figure 4.5. Conceptual situations underlying T's movement of object words.

Table 4.5. *Syntax of movement of object words as a function of age in months*

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Stuck</i>				
(4) object	pre	Baby stuck	Big rock stuck	That string's stuck
(8) object	post		Stuck this	
(2) location	post+prep		Stuck on bowl	Stuck there
(1) object	post		Stuck this Daddy	
+location	post-post			
(1) object	pre			M stuck on there
+location	post+prep			
<i>Move</i>				
(13) object	post	Move broom		First move this
(1) object	post			
+location	post-post+prep			Move p's off chair
<i>Stay</i>				
(1) location	post	Stay here		
(2) object	post	Stay Pete		
(2) location	post			
+object	post-post	Stay here rug		
(1) object	pre			You stay right there
+location	post			
<i>Go</i>				
(1) actor	pre	Maria go		
(6) location	post+prep		Go 7-11	Go to store
(4) object	pre		Pete go with-me	I go outside talk
+location	post		garbage-man	to Maria
<i>Come</i>				
(2) object	pre	Maria come-in	B-c come-in too	
(7) location	post+prep	Come-in outside	Come with me	Come back here
(6) object	pre		M come-on in	Smoke coming out
+location	post+prep		living room	the chimney
(1) location	post		Come back here p	
+object	post-post			
(4) w/ Verbs			Come help me	
<i>Came-off</i>				
(2) location	post		Came off Grover	
(2) object	pre		That came off rug	
+location	post			
<i>Bring</i>				
(9) object	post	Bring chair	Bring a paper-towel	
(1) object	post			Bring her in there
+location	post-post+prep			
(1) object	post			Bring that for Daddy
+dative	post-post+prep			
<i>Take</i>				
(5) actor	pre	D take a bottle	D take a sponge	
+object	post			
(1) actor	pre		D take to Maria's	
+location	post+prep			
(2) object	post		Take the p in the g	
+location	post+prep			

Table 4.5 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
(3) actor pre +object post +location post-post			Daddy take b school	
(2) Other w/ "off" and "out"				Take more first
(6) object mid			Take this key off	
(7) object mid +location post			Take these things out D's office	Take that off there
<i>Get</i> w/ "out"				
(5) object pre	My get-out	Grover get-out		
(3) object post		Get-out kisses	Get-out me	
(2) object mid +location post+prep			Get me out of my b	
(1) actor pre +object mid +location post				You get your cigarettes out of here
w/ "off"				
(1) location post		Get off there		
(3) object pre +location post		Maria get off there	W get off D's r	
(2) object mid (4) object mid +location post			Get M's pants off Get me off here	Get these pickles off my hamburger
w/ "down"				
(2) object post			Get down this book	
(1) actor pre +object post			Me get it down book	
<i>Put</i> w/ "in" and "on"				
(5) location post+prep		Put-it in	Put on me	Put in here
(2) location post +object post-post		Put-it on ring		
(3) object mid			Put MG on	
(21) object mid +location post			Put Grover on there	Put milk on it
(1) actor pre +object mid			D put new p's on	
(1) actor pre +object mid +location post			M put it in the w	
with "up" and "down"				
(3) object mid			Put that up	Put my t down
(1) location post			Put up sky	
(3) object mid +location post			Put r's up there	Put it up there by the window
(2) Other				Put the 9 by the letter M

Note: For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

change of state words concern whole objects or events undergoing changes of location (including absence), the current group contains transformations that concern changes within the object itself. As in the case of location words, these particular relations must be depicted by means of iconic representations of the states involved, and these are different for each change of state word involved.

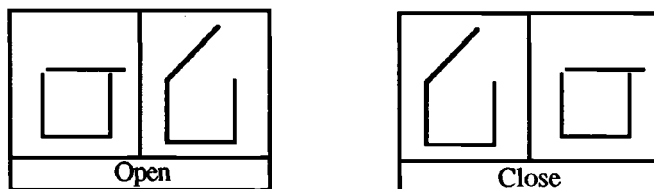
4.6.1. *Open and close*

In the 3-day period 17.23 to 17.25, T requests “Open” to her parents when she wants the door opened, a jar of jam opened, a box of cookies opened, and her mother’s hand opened. T’s parents had used this word in a variety of predictable circumstances with doors, jars, and so forth. The vast majority of T’s combinations with *open* were requests of the “Open _____” variety. Thus, “Open door” (16.28) wanting help, “Open book” (16.21) wanting Mommy to, “Open mouth” (19.01) wanting Mama to, “Open the button” (19.05) wanting a doll’s clothes unbuttoned, “Open this cards” (19.20) wanting the next card in the pile, and “Open this paper” (19.22) wanting a popsicle unwrapped. On one occasion, however, T named the instrument being used rather than the object to be opened: “Snake open” (18.21) trying to use a snake key to open the door. This reverse ordering of elements did not uniquely specify an instrument as she says “Open it keys” (on the video at 18.25) in a similar situation. Furthermore, T also put *open* in the second position on two other occasions, once as a request in a situation indistinguishable from the typical one (“Door open” [18.29], wanting it open), and once as the only recorded comment, “Door open” (19.20). Soon after 20 months, T produced “Open this one now” and “Open this one too.” The only two complex sentences in which she attempted to express more than one semantic role were: “Daddy open this top” (19.22) as a request, and “Watch me doors open” (19.31) as she crawled into a cabinet.

The polar opposite *close* was used in a way very similar to *open*. In similar situations, only wanting something closed, T used the single-word request “Close” when she wanted the door closed (18.19), when she wanted Mommy’s hand closed (18.24), and so forth. On the video at 18.25 is one of T’s only two comments; she says “Close” as she herself closes a box. All of T’s combinations except two place *close* in the first position. For example: “Close this window” (18.31) as she tries to, “Close-it this door” (19.23) as a request, and “Close your eyes” (22.05) as a request. The two exceptions are the inexplicable “Window close” (19.30) as a request, and at 20.11, “Butt closed” to tell us that she does not want her temperature taken. (The status of the past tense is discussed in chap-

ter 6). This is her only description of a state with either of these terms.

Picturing these states in iconic form thus yields the two prototypical representations:



4.6.2. *Woops, uh-oh, fall-down, drop, and spill*

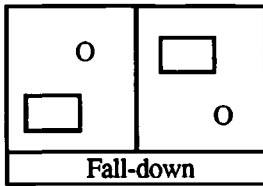
In the weeks preceding 17 months, T said “Woops” or “Uh-oh” when things fell unexpectedly. *Uh-oh* was used only for T dropping or spilling things, and *woops* was used for these situations as well as others in which things happened contrary to expectations, for example, when she fell, another person fell, or a toy fell. These words were used by T’s parents in these types of situations, but whether they were distinguished in this way is uncertain. Both of these words were used less and less during the 17- to 20-month period as *fall-down*, *drop*, and *spill* became more general, and of course neither was combinatorially productive. Neither appears on either of the tapes at 23 months.

T first used *fall-down* shortly after 17 months as a single word to comment on herself or others bodily falling down. Shortly thereafter she used it to comment on blocks falling (17.19) and a man on television falling (17.21). Her use became general very quickly, and during the 18- to 20-month period T produced approximately 25 two-term expressions with *fall-down*. Order for these combinations was variable, for example, “Fall-down man” (17.27), “Ball fall-down” (17.29), “Fall-down chair” (19.22), and “Box fall-down” (20.06). In almost all cases the object label or name referred to the person or thing falling down. However, two sentences expressed locative information instead the thing falling: “Fall-down here ground” (19.29) about what had happened to her the day before, “Fall-down there” (19.29) commenting on a spoon that had fallen behind the bed.

During the 20- to 24-month period T used the negative, present-progressive, and past forms of *fall-down*. On 22.27 T told Mommy “Not fall-down playground” as a promise about today after she had fallen the day before. On 20.30 she told a parent “Maria falling out car” as her friend was hanging precariously out the door of a parked car, and at 21.14 she reports “Pajamas falling down” about her nightwear. Finally, on 19.19 T reported that “Maria fell-down” about the previous day’s event, and on

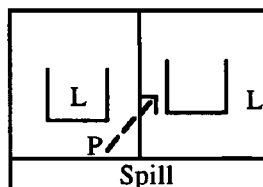
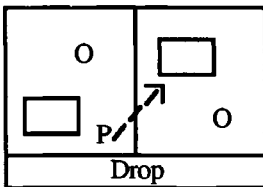
20.01 she reported that “Cherries fell-down” after they fell off the table. It should be noted, however, that many of her uses of *fall-down* during this same period (e.g., about the spoon behind the bed three days later) are about past events for which an adult would have used *fell*.

Woops, *uh-oh*, and *fall-down* refer to very similar conceptual situations. The pragmatics of their use is certainly different, with both *uh-oh* and *woops* having a more performative quality. In any case, I propose one representation for the three terms (illustrated as *fall-down*). The proposed diagram indicates that an object that is above some landmark (e.g., the ground) ends up below it. Although these words also carry connotations of unexpectedness for T, this aspect is not represented.



Note also that how the objects go from up to down is not specified. This would seem appropriate because some of T’s uses of *fall-down* occurred in both intentional and nonintentional circumstances (i.e., in many cases someone could intentionally fall down or push something over and T would still utter one of these words).

Related to these two early words are the two slightly later words *drop* and *spill*. *Drop* was first used at around 19 months, both as a single-word comment and in sentences, when T or someone else dropped something. *Spill* was first used about 3 weeks later when someone spilled something. These words seemed to take over from *fall-down* all those uses in which an object was dropped or spilled by someone (e.g., “Fall-down Weezer” [18.30] as she drops him and “Fall-down juice” [19.04] as she spills it). An indication of the close relation of these expressions is T’s broken recounting of an incident for a neighbor at 19.23: She says “Spill-it table. . . Made this. . . Spill this. . . Fall-down.” The conceptual situations indicated by these words may thus be represented (with *L* standing for liquid):



Note that the broken casual arrow indicates “accidental causality,” that is, a person is responsible but in an accidental (not positively casual) way.

The representation of this is necessary both in order to distinguish these words from *fall-down* (and *woops*), which do not seem to concern any casual implications but merely unexpectedness, and because both *drop* and *spill* appear in sentences expressing the actor from around 20 months.

The syntax of these two words is different. *Drop* was used in two-term combinations with both the thing dropped and the location it dropped to. The thing dropped was in preverbal and postverbal positions equally often. Thus, T said “Drop-it ice” (18.30) and “Ring drop-it” (19.10) after she dropped items. She sometimes left the object unspecified and placed the location in the post position, for example, “Drop-it here” (19.23) and “Drop down table” (20.09). Two sentences specify two arguments. In one the person who dropped the item was in the preverbal position and the item dropped was in the postverbal position: “Daddy dropped the paper” (20.19). In the other the item dropped was in the preverbal position and the location was in the postverbal position: “Coffee dropped mine toe” (20.27). The syntax of *spill* is simpler. In all of her two-term expressions, T indicated in the postverbal position the location of the spill (never is the thing spilled named) – for example, “Spill it couch” (19.23) and “Spill it tummy” (19.23). Also at 19.23 T says “Mommy spill-it on leg” specifying both the spiller and the spillee, and at 21.05 she says “Spill something over Mommy’s coat” indicating the spillee with the proform and the location with a prepositional phrase. As far as I can tell, there is no distinction between the present and past forms of *spill*, both of which refer to an immediately preceding event; the one exception is “I never will spilled it” (21.01) as a promise not to.

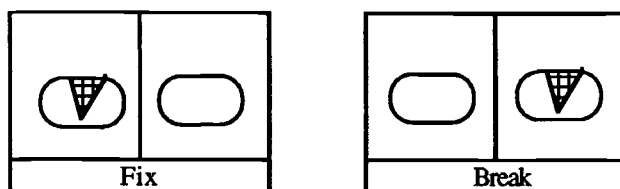
4.6.3. *Fix, break, tear, and crack*

T’s original use of *fix* was also for hammering (and sometimes for pretending to fix dinner in a pot). But during the 19- to 21-month period as *hammer* became well established, this term was used more widely and not just for hammering. Thus: “Fix-it car” (19.05) spying a neighbor under his hood, “Fix-it record” (19.05) as a request to play a record over again, “Fix-it fire” (19.21) wanting more charcoal on the fire, and “Fix hamburger” (20.01) pretending with a frying pan. At 21.27 she says “Have Mommy fix it” (this has been discussed under *have*). The use of this term thus indicates, as argued for example by Kagan (1984), T’s emerging awareness of the canonical state of things and that people can do things to restore that state when it is not present.

Closely related to this more abstract use are the terms *break*, *broke*, and *broken*. Shortly after 19 months, T says “Break this bite” asking that her

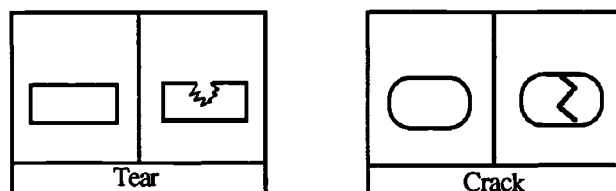
popsicle bite be broken in half. At 19.31, she says “Broke a light” pointing to a broken kitchen light, and on 20.19 she comments that “Weezer break my mirror” after the cat had bumped into her mirror. On four occasions, T comments that something is broken, for example, “Ice broken” (19.03) to crushed ice, “Broken glass” (19.11) after she broke it, and “Grover broken off” (21.12) after she broke a string off Grover. These past-tense uses are related to those like *made*, *gave*, and *came-off* in which the utterance is precipitated by an object and the utterance is supposed to indicate that its current state is the result of some past transformation.

It is difficult to know how to represent these words formally, because indeed they cover so many diverse situations. Letters standing for something broken could be used, but they would not be any different formally from the iconic representations chosen here, which are meant (in contrast with *tear* and *crack*) to depict an abstract class of events. The iconic representations of the prototypes of these two situations are thus:



Also closely related to these two words were T's two infrequent expressions *tear* and *crack*, both of which referred to a concrete action. Her one sentence with *tear* was “Tear this mine” (20.11) after she had ripped her mask, and her two sentences “Crack this for my teeth” (20.07) (meaning “with”) and “Crack this pecan by my teeth” (20.28) (again meaning “with”) both were specific to using her teeth. This specificity calls into question their status as true change of state words applicable to a variety of objects and actions performed on them, but nevertheless I give them the benefit of the doubt as they seem to focus on the object's transformation and not the child's action. T did not on any recorded occasions refer to the end state of these processes – to “torn” or “cracked” objects.

Because the difference between these two words had to do with the nature of the malady (a tear leading to an open wound), the prototypical conceptual situations may be represented:



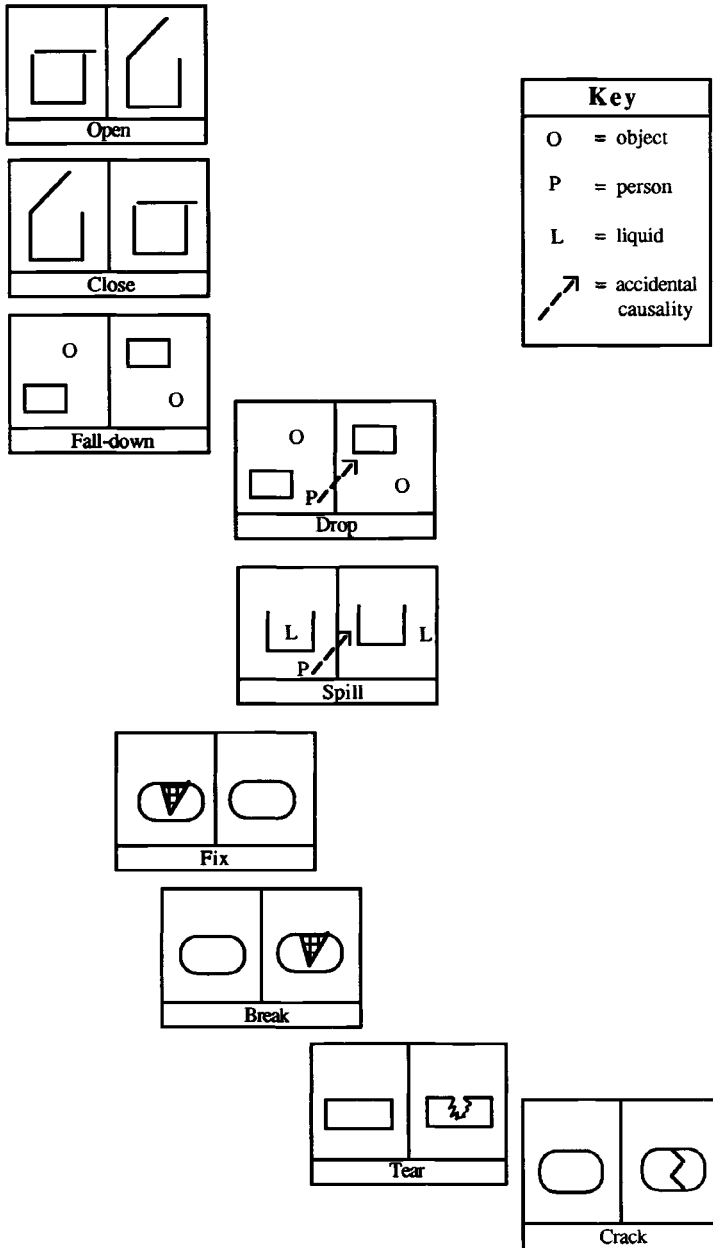


Figure 4.6. Conceptual situations underlying T's state of object words.

Table 4.6. *Syntax of state of object words as a function of age in months*

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Open</i>				
(35) object	post	Open door	Open the umbrella	Open this top shelf
(1) object	pre		Door open	
(1) instrmnt	pre		Snake open	
(1) instrmnt	post		Open-it keys	
(1) actor	pre		Daddy open this top	
+object	post			
(1) Other		Watch me doors open		
<i>Close</i>				
(2) object	pre	Window close	Butt closed	
(8) object	post	Close this		Close your eyes
<i>Fall-down</i>				
(10) object	post	Fall-down man	Fall-down chair	
(6) object	pre	Ball fall-down		Cherries fell-down
(2) location	post		Fall-down here ground	
(4) Others				M falling out car
				Not fall-down p-ground
<i>Drop</i>				
(4) object	post		Drop-it ice	
(2) object	pre		Ring drop-it	Popsicle drop-it
(4) location	post		Drop-it down	Drop down table
(3) actor	pre			D dropped paper
+object	post			You dropped that toy
(1) actor	pre			
+location	post			D dropped mine toe
+location	post			
<i>Spill</i>				
(5) location	post	Spilled-it a beard		
(1) actor	pre	M spill-it on leg		
+location	post			Spilled Weezer milk
(1) object	post			I spilled it
(1) actor	pre			
+object	post			Spilled something over
(1) object	post			Mommy's coat
+location	post-post+prep			I never will spilled it
(2) Other				
<i>Fix</i>				
(6) object	post	Fix-it car	Fix hamburger	
(1) w/ Verbs			Have M fix it	
<i>Break</i>				
(1) object	post	Break this bite		
(1) actor	pre			W break my mirror
+object	post			
<i>Broken</i>				
(3) object	pre	Ice broken	Grover broken off	
(2) object	post	Broken glass		

Table 4.6 (*cont.*)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Tear</i> (1) object post			Tear this mine	
<i>Crack</i> (2) object post +instrmnt post-post+prep				Crack this pecan by my teeth

Note: *Woops* and *uh-oh* were used as single words only. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

4.6.4. Summary

Semantically, all of the words in this group were used in fairly adultlike ways throughout. *Open* and *close* were almost always used as requests; with few exceptions, they were not used to comment on the current state of objects. *Woops*, *uh-oh*, *fall-down*, *drop*, and *spill* all concern cases in which objects end up in positions contrary, in some sense, to T's (or someone's) normal wishes or expectations; that is to say, they end up in a downward rather than their normal upright position; *drop* and *spill* seem to involve the "accidental" causality of agents. *Crack* and *tear* were used as comments but they (or any variants of them) were not used at any time to refer to end states; both of these were confined to a fairly narrow range of situations in the current corpus. *Fix* began in a narrow situation and soon was generalized, but was never used to refer to a "fixed" object. *Break* was used in a variety of situations to request that something be broken, to comment that she "broke" something, and to comment that something was broken. Figure 4.6 summarizes the order of emergence of these words.

Syntactically many of the current group of words are fairly consistent: The desired or end state is expressed before the thing undergoing the state change (with a few perfectly appropriate exceptions for *broken*). Thus, for *open* and *close* 43 sentences place the object in the postverbal position (e.g., "Open syrup"), and only 3 place it in the preverbal position; all of these are before 20 months. With only a single exception ("Daddy open this top" – and this might have been an address), neither of these verbs is involved in any sentences in which the actor or any other arguments are expressed; neither is involved in complex sentences involving more than one verb. *Fix* fits this general pattern as well, the only exception being one sentence with another verb. *Break* is used in

this same way with one sentence expressing the one doing the breaking; *broke* and *broken* show variable orderings as they do in adult language (“Glass is broken,” “Broken glass”). The three sentences with *tear* and *crack* all place the object after the verb and fail to express the actor. *Fall-down* is the one state word that is inconsistent in its ordering scheme early. It straightens out at around 20 months, expressing the object in preverbal position from that point on. *Drop* and *spill*, learned a bit later, also show some early inconsistencies but they transform into more adult-like usage with actor and object during the 20- to 24-month period as well. Table 4.6 summarizes these sentence patterns. *Woops* and *uh-oh* are used as single-word comments only.

5

Activity verbs and sentences

The change of state verbs analyzed in the previous chapter all refer to situations in which an object or event undergoes some change of state or transformation with well-defined beginning and end points. Formal representation of these words involved depicting the state of the object at an initial “moment of attention” followed by its state at subsequent, including terminal, moments of attention. On the other hand, a second very broad class of verbs involves not the transformations of objects but the actions people and other animate beings perform – actions such as seeing, running, throwing, waving, licking, crying, and loving. These words have as their underlying conceptual situations not object states but bodily or psychological states and motions. Further, although these activities do take place in time, they do not rely crucially on a well-defined sequence of states with characteristic beginning and end points: Running and seeing have durations but not well-defined initial and final states. In general, when the child “moves” or “gives” something, she is focusing on the object and its transformation, and many different specific actions may effect the change of state; when the child “sees” or “touches” something, she is naming the specific action she is actually performing, and the effect on the object is in the background. These two classes of verbs have been identified and analyzed by a number of linguists (e.g., Foley & van Valin, 1984) as well as some developmental psycholinguists (e.g., Edwards, 1973; Huttenlocher, Smiley, & Charney, 1983).

Despite the identifiable differences with changes of state, I have decided not to provide formal representations for T’s activity words mainly because they would require a whole new formalism that I am not prepared to construct. Formal representations of these words would involve providing, among other things, some theory of the child’s perception of her own physical actions and mental states. This seems much more problematic to me than representing the people, objects, and transformations involved in an act of giving, for instance, in which the actions are “public”: The observer experiences the “same” event as the child. In any case, I do not have a theory in which to ground a formalism of the child’s

representation of *see* or *run*, and thus I merely provide for these words adult English descriptions – with an attempt to be as precise and as child-centered as possible.

It is important to point out that some of T's words that I have classified as activity words are from an adult perspective changes of state. In these cases, my best judgment is that T did not conceive of the changes of state that adults do when they use the word. To cite two clear examples: For T *kill* referred only to the situation in which an exterminator sprayed for bugs (it is unlikely she knew about living and dying), and *paint* seemed to refer only to characteristic actions with a paint brush, not a transformation of a surface from unpainted to painted. More generally, I must emphasize again that I do not believe that any of the categories of verbs I have enumerated for T – or any categories – have grammatical reality for her; she is operating with an inventory of individual lexical items.

Despite the focus on the child's actions, many activity verbs nevertheless do involve actions on objects: When the child is licking or throwing, she must be licking or throwing something. Within the class of activity verbs, therefore, we may identify two broad classes: verbs whose underlying conceptual situation involves objects, and verbs whose underlying conceptual situation includes only actions or psychological states, with objects playing no role or a negligible role. This distinction is useful because, as reported earlier, in some of her earliest language T used some words to refer both to an object and the action characteristically performed with it. I report on T's activity verbs in two sections corresponding to these two classes. Within each of these classes there are some further distinctions to be made, and I make them in introducing each section. As in the previous chapter, for readers not inclined to wallow in the details I provide summaries with figures and tables at the end of each section. The appendix provides the raw data, organized in coordination with the two sections, on which the discussions and analyses are based.

5.1. Activities involving objects

Within the category of activity verbs involving objects we may discern a continuum. On one end are those that involve specific objects in action-defining ways; for example, for T sweeping must employ a broom, hammering must employ a hammer, and buttoning must involve a button. This is important because in some cases it is not clear that T knows anything about the adult meaning of the word except that it refers to some action with that object, for example, locking for T involves only touching the key to the lock. On the other end of the continuum are actions involving nonspecific objects – for example, biting and throwing

must involve objects, but almost any object will do. These are thus close to change of state words, but for these words the activity is defined by the subject's action, not its effect on the object, and there are no characteristic beginning and end points of the changes that the action effects on the object. In general, in this section those words involving more specific objects are reported nearer the beginning and those involving less specific objects are reported nearer the end.

5.1.1. *Sweep, brush, wash, and clean*

From the beginning of her language T was interested in cleaning and grooming (recall her prelexical form *towel* as a cleaning activity, reported in section 3.4 on T's earliest language). The first true word of this type was *sweep* or *sweeping*, which always involved a broom (as did the parent models, presumably). T first used *sweep* or *sweeping* during the 16- to 17-month period as a one-word accompaniment to her activity of sweeping with a broom. Her only combination with either of these forms was "Sweep Weezer" (20.01) as she chased the cat with the broom (thus showing that the word was not defined by the change of state of dirt or some such transformation).

The second word of this type to be learned was *brush*, for using any kind of a brush. T's first single-word uses came during the 18- to 19-month period and were invariably accompaniments to her activity of brushing (the form was sometimes "Brush-it"). In the beginning, following parental models, T used this word almost exclusively for brushing with a hairbrush; later she generalized to other brushes. Her only three combinations were: "Brush-it hair" (18.31) as Mommy is brushing her hair, "Brush-it steps" (19.24) as she brushes water onto the steps with a paint brush, and "Brush my teeth" (20.03) as she does so with a toothbrush.

Closely related to these two words was T's word *wash*. T's parents used this word to refer to the act of using soap or water to wash – especially in situations of washing hands, hair, and so forth. T's first single-word uses (often of the form "Wash-it") came during the 19- to 20-month period in these same situations, for example, on the video at 19.26 when she approaches the baby doll with shampoo in hand saying "Wash-it." Of her nine recorded uses six involved a person or body part, two of the exceptions being "Washing-it steps" (19.24) as she brushed water onto the steps with a paint brush (this is the same occasion on which she said "Brush-it steps") and "Wash the car" (20.03) as she did so with a sponge. The third exception is the relatively early "Wash-it paper-towel" (18.31) as she washes something with a paper towel. All of T's eight combinations (except "Wash-it paper-towel") specify what is being

washed in the postverbal position, for example, "Wash-it hand" (20.01) as she does so and "Wash the Mommy's ear" (20.08) as she is doing it.

Closely related to *wash* is *clean*. T's early uses, in the 19- to 20-month period, concern two main situations: cleaning with a cleaner or cleaning up a spill, in which case a dry paper towel or sponge or mop is used to soak up liquid. On the audiotape at 19.27 she uses both *clean* and *clean-it* (a total of three times) when cleaning up a spill with a paper towel. Her first combinations are "Clean this" (19.00), "Clean door" (19.04), and "Clean this" as she uses a sponge or cleaner on the refrigerator or door. From 20.06 on, 6 of 7 of T's uses involve a mop, for example, "Clean this grass" (20.06) as she "cleans" the grass with her mop and "Clean this tiny tent" (20.06) as she wipes the tent with a mop. The one later example not involving a mop is "Clean this muddy" (20.06) as she scrapes the mud off her feet. In 9 of her 12 combinations she simply specifies the thing being cleaned in the postverbal position (as in the previous examples). Two others are: "Clean this paper-towel" (20.01) as she cleans up a spill with a paper towel (this was within 2 days of the use of *wash* with this same instrument), and "Clean this up-here" (20.06) using a mop to clean an elevated surface. Finally, on the audiotape at 23 months T produces her one sentence specifying the one doing the cleaning: "I clean that up," using a paper towel for a spill.

5.1.2. *Paint, hammer, and lock*

In the same episode on the same day as the two examples of *wash* and *brush* (i.e., playing on the steps), T also produced her only utterance with *paint*: "Paint the steps" (19.24) as she brushed on water with a paintbrush. Because the action involved was exactly the same in all three utterances (brushing water on the steps), it can only be surmised that in one case she was focused on the brushing, in another on using the water to wash, and in the other on the fact that it was a paint brush she was using (though possible, it is unlikely that she was focused on the discoloration of the steps for painting).

During the 17- to 18-month period, T learned to say *hammer* as she hammered on something with a hammer or as a request to do so (there are four video examples, two each at 17.26 and 18.25). Her first combination at 17.17, "Mommy hammer," is a request that her mother perform the activity. Her next seven combinations in the succeeding month all specified what was being hammered on in the postverbal position, for example, "Hammer table" (18.02) as she does so, and "Hammer doughnut" (18.25 video) threatening to do so. Her final combination, at 20.16, is the novel "Hammer this noise" as she hammers a metal box thus creating the noise.

At around 18 to 19 months T also learned *lock* or *lock-it* for playing with a key in a lock. On the video at 18.25 she asks to “Lock-it” when a lock on a door is above her reach (i.e., she has a key and wants to be lifted so she can put it in the lock) and comments “Lock . . . door” as she does so. On the video at 19.26 (in the same room and about the same door) she requests two more times to “Lock-it.” T’s one combination is the interesting “Lock that Lulu” (18.24) wanting a picture of Lulu to be locked in a drawer.

5.1.3. *Draw, read, working, and write*

During the 16- to 19-month period T used the word *yaya* (with long vowel sounds modeled on the intonation of the adult “Are you *drawing?*”) as she was drawing with crayons or as a request to be allowed to draw. There are 24 video and audio examples of *yaya* at 17.26 and 18.25, 18 of which are requests, 5 of which are comments on her own activity, and 1 of which is a comment on a parent’s activity. Of her 7 combinations with *yaya*, 5 of them specify the thing drawn on, for example, “Yaya book” (17.28) as she prepares to draw in the book, “Yaya paper” (18.06) wanting some paper to draw on, and “Yaya this” (18.20) wanting to draw on the couch. The other two specify what has been or is to be drawn: “Yaya mans” (17.28) telling Daddy what she wants him to draw a picture of and “Yaya this” (18.25 video) showing us the picture she has just drawn.

At around 19 months the form of this word changed to the adultlike *draw*. On 19.16 T says “Draw man . . . Draw me . . . Draw me man,” when she wants a man drawn on her hand (like her friend has). During the next 3 weeks T continued to talk mostly about where she was drawing or what she wanted to draw, but without marking them differently; for example, “Draw this door” (19.20) as she drew on it, “Draw this paper” (20.01) as she drew on it, and “Draw me” (19.21) as she was attempting to draw a picture of herself. On 20.08, for the first time T begins to mark these two functions appropriately and differentially by requesting that Mommy “Draw star on me.” Two days later, she also marks the location of drawing “Draw on paper-plate down here,” and a month later she produces “Draw on the paper” as she is doing it. At 23.26 T requests “Draw some hands for the man” wanting hands added to a picture of a stickman. T does not specify who is drawing (with the exception of the aborted “Me draw . . .” on the video at 19.26) until the video at 23 when she says “I draw,” “I draw on this,” and “I draw on the man.” Her only specification of the drawing implement comes late in “I want to draw with Stu’s pen” (24.28). Four miscellaneous examples are “Draw too” (19.16), “Maria told me draw” (19.29), “Draw like Maria”

(20.15), and “Real hard draw” (20.22). It is interesting to note that in her uses of this complex word T at one time or another attempts to express the drawer, the thing drawn, the place drawn on, the implement drawn with, and who the picture is being drawn for. At one time or another she provides adultlike expression for each of these, but never for more than two of these in any one sentence.

Also during the 18- to 19-month period, T learned to use the word *read* (or *reading*) for looking through a book or newspaper (or to request such activity). Of the 16 video and audio examples (2 single words and 14 combinations) 5 are requests and 11 are comments on her own activity. Of her 13 combinations, all but two specify what is being read and this is always placed in the postverbal position. For example: “Read this” (18.29) wanting Daddy to read a book, “Read pictures” (19.00) wanting to look through a photo album, and “Read this Tyson paper” (19.22) as she reads the Tyson’s newspaper. On 19.18 she asks to “Read this book again.” One example in which T does not specify what is being read occurs in a sequence in which she has already expressed that; thus, “Outside. . . . Read this book outside. . . . Read this book. . . . Read outside” (18.31). In the final sentence she says where she wants to read, but the previous sentences also specified what she wanted to read. The other exception is the cryptic “Read you . . . Ping” (video at 23 months) apparently asking that Daddy read the Ping book to her.

On some occasions when T would ask where Daddy was or if she could play with him, her mother would reply that he was upstairs “working” (at his desk); this often carried the implication that she was to be quiet and not go in the room. During the 19- to 20-month period, *working* as a single-word comment thus became T’s way of expressing that someone was doing something at a desk or with paper and pencil (and she was supposed to be quiet or stay out of the room). Her one sentence is “Daddy working real hard” (20.15) about her father writing at his desk. A related but only once used word was *write*. Her one recorded use is “Write on Daddy’s chair” (20.10) as she is doing it.

5.1.4. *Cut, cook, cover, and button*

During the 17- to 18-month period T began using *cut* for using a knife. As argued for *paint*, it is not likely that T conceived of cutting as an achievement or change of state with a well-defined result, but rather her “looser” usage argues for a conception involving some directed yet unspecified activity with the knife. At 19.17 and 19.18, however, she generalizes *cut* to toenail clippers (“Cut-it toes,” with clippers in hand), specifying what she wants to cut in the process. It is unknown whether T’s parents made and thus induced this generalization, but in any case

it evidences a more mature conception of cutting. At 20.08, T says she is going to “Cut Weezer” as she chases the cat with a knife, and at 23.25 she specifies the instrument for the one and only time: “Cut it with the knife” as a comment on her mother’s activity.

During the 19- to 20-month period, T began using *cook* or *cooking* as a single word to comment on her own activity of pretending with a pot (parents had asked her as she played, “Are you cooking?”). Two of her four sentences were “Cooking dinner” (video 19.26 and 21.01) as she engages in this game. One of her other two sentences was “Rolls cooking” (20.06) which displays an interesting variation; that is, the adult interpretation would be that “Cooking dinner” is T’s way of commenting on her own activity (“I am cooking dinner”) while “Rolls cooking” is the intransitive form of the verb in which the thing undergoing the cooking process is placed in the preverbal position (“The rolls are cooking”). The other possibility is that T places the thing undergoing the cooking in variable positions. The other sentence is the mysterious “Step cook dinner” (20.13) after she stepped on the top of a pot.

Cover was T’s word for covering things with a blanket. There is no record of single-word use. Although T produced only five sentences with *cover*, there are four distinct sentence frames. In her first sentence at 20.09 she says “Cover me clown” when she wants to cover the clown with a blanket (this is one of her latest misplacements of the actor). Her other three sentence types all involve the verb particle *up*. At 20.26 she asks that someone “Cover me up,” at 21.05 she says “Lay-down cover up,” and on the video at 23 months she requests “Cover me up by my silk” (meaning “with”).

The final verb in this group is the once used *button*. There is no record of single word use. In her only sentence with this verb, T asks that someone “Button this robe” (20.10).

5.1.5. *Ride, drive, and bump*

During the 17- to 18-month period, T used for the first time the single-word comment on her own activity, *ride*. In its early uses, this expression referred specifically to her straddling something (e.g., toy horse, pillow, ball, or bike) and did not refer to the more passive riding in the car and the like. The one video example of single-word use is at 18.25: “Ride” in reference to a toy clown that Daddy has placed astride a toy truck. Most of T’s 18 combinations with *ride* during the 18- to 23-month period fell into one of two patterns: specification of the thing being ridden in the postverbal position (11 entries), or specification of both the rider in the preverbal position and the thing ridden in the postverbal position (5 entries). Examples of the former are “Ride horsie” (18.01) as she is

doing so, "Ride this bicycle" (19.22) wanting to be pushed on the bike, and, in the only instance of prepositional marking in this sentence frame, "Ride on Mommy" (21.13) as she does so. Examples of the latter pattern are: "Big Bird ride horsie" (19.08) of a television character who is riding, "Me ride this horse" (19.20) to a picture of herself doing so, "Boy ride elephant" (19.24) to a toy that is doing so, and, in the only prepositional marking in this sentence frame, "Holly's riding on Dopey" (video at 23 months). The two other sentences are "Ride again" (18.20) asking to ride for the first time of the day, and "Ride in here" (19.23) as she is riding in a seat that moves (note that in this one case where the rider is not straddling the object, she says *in* instead of *on*).

At around 19 months, T also learns the word *drive* (or *driving*) for herself behind the steering wheel of the car pretending to drive (or as request for such activity). This verb was not combinatorially very productive as T's only two sentences were "Driving car" (19.00) as a request to drive and "Daddy drive keys" (19.07) as she spies the car keys on a hook on the wall (presumably meaning *with* the keys but because it is not marked differently from the thing being driven, and because the context is ambiguous, T's intentions in this case are unclear).

Also at around this same time T learns to say "Bump" when she is playing in or with a toy car and bumps into things. Her one combination is "Bump this car" (19.22) after witnessing a car crash on TV.

5.1.6. *Catch, throw, roll, and kick*

Catch was first learned by T at around 17 months in a game of catch. As her parents did, she used it to tell someone to "Catch!" an object she was throwing to them. She would sometimes append the name of the person being addressed, for example, "Catch, Daddy" (17.28) as she threw him a pillow. Except for addressee combinations of this type, there are only five sentences with this verb and all involve specification of the thing to be caught. At around 18 months, T began using two-term expressions such as "Catch ball" addressed to the person who was supposed to catch it. At around 19 months T also began using this word to comment or request her own activity of catching, for example, "Catch bubbles" (19.04) as she is trying to and "Catch the silk" (19.27) as a request to Daddy that he throw it so that she can catch it.

Throw was learned during the 18- to 19-month period, but was not used very frequently. T used it as a single word to comment on her own act of throwing at around 18 months. Her combinations are interesting because there are only four and each has its own unique form. "Throw da ball" (18.11) specifies the object that she is throwing, "Throw stairs" (18.18) specifies where she is throwing her shoe (not marked in any way

to differentiate it from a patient), “Throw the bottle hands” (20.03) specifies both what she is throwing and what she is throwing it with (without the adult-mandatory *with*), and “Throw it away” adds a verb particle.

T first used the exhortation *roll-it* to tell people to roll her a ball during the 17- to 18-month period (as they had told her to roll it to them). It is possible that in its earliest uses *roll-it* was a prelexical form accompanying the activity or that *roll-it* was the name of a game. In any case, at 17.25 T produces her only combination “Roll-it baby” wanting Mommy to roll her the ball (play rolling game).

Kick-it was first learned and used by T as a single-word comment on her own activity of kicking during the 19- to 20-month period. At 19.19, in her only sentence with *kick*, she says “Kick-it ball” as she does so.

5.1.7. *Hit, touch, pat, stick, squeeze, and rub*

Hit was learned and used by T during the 18- to 19-month period as a single-word comment on her activity of hitting something or someone, either with her hand or with some implement. Her first combinations all specified the thing she was hitting, for example, “Hit ball” (18.25) as she was doing so and “Hit Mommy” (19.25) as she was doing so. At 19.05 she begins to talk about others hitting her, for example, she says “Danny hit me tennis” (after he had hit her with a tennis racket), thus specifying both the person hitting and the instrument used (without the mandatory “with”). At around 20 months she says “Maria hit me” (19.26) after Maria had hit her and “Daddy hit me real hard” (20.18) after he had yelled at her, thus specifying the hitter and the thing hit. On the video at 23 months, she says “He’s gonna hit me,” “Because Maria hit the squares,” and “Because her hit me.” There are no entries in which the hitter, the thing hit, and the instrument used are all expressed in a single sentence.

At around 18 months, T learned to say *touch-it* as a single-word request or comment that she touch something. At 18.16 she says “Touch light” as she does so, at 18.25 she says “Touch nice” as she touches the kitty, and at 20.10 she says “Touch me bowl” as the bowl rolls up against her. Note that each of these sentences concerns a different semantic relationship: the thing touched, how she should touch (i.e., nice), and, in the final noncanonical sentence (adults would say “The bowl touched me”), the fact that an inanimate object rolled up against her. During this same period, T learns *pat* as a single-word comment on her own activity of patting animals (usually on the head).

During the 19- to 20-month period T learned the verb *stick*. There are no recorded instances of single-word use. At 19.17 T tells us “Stick

a foot in here” as she puts her foot in an empty carton, and a month later she reports “Stick the fingers in my jelly.” At 22.03 she tells her friend to “Stick it in my butt” in the midst of a game involving poking each other with a stick. Note that in all three cases the thing being stuck and the location are specified. During this same period, T learns the single-word comment *squeeze* as she is in the process of squeezing things (toothpaste, oranges, etc.). Finally, at 23 months there is one diary entry for the related verb *rub*: “Rub it in my hair” as she does so.

5.1.8. Eat, ate, drink, and swallow

During the 18- to 19-month period, T learned to use *eat-it* as a single-word comment on her activity or as a request to eat. During this same period, she also produced two-term expressions with the verb *eat-it*. These were mostly as comments on her own or another’s activity, although there are several requests as well. In two of these, the thing eaten was placed in the preverbal position: “Lemon eat-it” (18.31) and “Bacon eat-it” (19.25), and in nine sentences it was placed in the postverbal position, for example, “Eat-it popsicle” (19.12) as a request, “Eat-it soup” (19.23) doing it, and “Eat-it lion” (20.00) as she eats an animal cracker. On 19.07, she also produced the playful “Doo-doo fork eat-it” as she is on the potty. During the 20- to 23-month period, T produced the only sentence of this type with the eater expressed: “Cookie Monster eat Ernie’s cookie” as a comment on a television happening. Three other complex sentences were “Look at Pete eating a bone” (21.10), “Mommy gave that cereal for me to eat” (22.07), and “I love to eat pretzels” (25 months), which will be dealt with in each case under the main verb.

After 20 months T produced a variant on these sentences. On eight occasions she used the periphrastic *eat . . . up* or *eat . . . all up*, for example, “Eat-it all up ice-cream-sandwich” (20.03) as she does so, “Eat mine skin up” as she does so to a banana skin, “Eat that waffle up” (20.29) as she does so, and “Eat-it all up apple” (21.06) as she does so. In one sentence of this type, T names the person eating: “Weezer eat my dinner up” (20.28) telling her parents that she is afraid the cat will do so. (The behavior of this and other verb-particle constructions is explored more fully in chapter 6.)

T also used on some occasions the irregular past tense *ate*: “Weezer ate balony, like me” (20.11) as she sees him doing so (she has been); “Weezer ate it all up” (20.19) after he had eaten her potato chip; “Ate mine potato chip on floor” (20.09) about a similar event; “Cinnamon ate my potato chip all up” (20.19) about a similar event with a different perpetrator; and “Weezer ate the roach” (20.21) after the cat had done so.

During the 18- to 19-month period T also learned to comment on her own activity of drinking with the single word *drinking*; later she also commented on the activity of others. Her single-word comment came first and usually pertained to her bottle. On 19.09 she said "Bottle drinking" as a comment on her own activity, and 2 days later said "Drinking bottle" in the same situation. On 21.29 she comments about a baby "Like me, drinking my bottle." Two of T's sentences with this verb specify the drinker in the preverbal position and what they are drinking in the postverbal position: "Weezer drinking the eggs" (19.28) as he is and "I'll drink all of that" (23.00) as she does so; one sentence adds the location as well: "Weezer drinking water Mommy's potty" (21.23) as the cat is drinking from the toilet. T also used two sentences that, like *eat*, used *up* as a verb complement: "Drink mine tea all up" (20.19) as Mommy is and "Drink my tea up" (20.24) as she does so. In one sentence she says she will "Drink it down" (23.00). (The complex sentences "Look at girl drinking a kool-aid" and "Pick that coffee up drink" are dealt with in chapter 6.)

On the videotape at 23 months, T produces three sentences with the word *swallow*. They are "Can't swallow it any more," "I won't swallow it anymore," and "I'm not going to swallow it anymore," all about her chewing gum.

5.1.9. *Bite, chew, lick, and blow*

During the 17- to 18-month period T learns to name the action *bite*. She uses this word to comment on either her own or someone else's activity (it could also be the name of an object – e.g., a bite of food). Her first combination is "Cookie bite" (17.19) as she tries to bite a cookie, but all other sentences express the thing bitten in the postverbal position. For example: "Bite apple" (18.07) as she tries to, "Bite stuck" (18.18) as Mommy tries to bite off a tag that is stuck on a dress, and "Bite this banana popsicle" (19.24) as she does so.

In the 19- to 20-month period, T comments with a single word that she is "Chewing" something. This verb is not combinatorially productive until the videotape at 23 months when she says "Chew it" and "Chew on . . . rock" (laughing).

Also during the 19- to 20-month period, T became interested in the pets licking (especially when they licked food off her hands). On 19.22 T's first use of the verb *lick* specified appropriately both the licker and what it was licking: "Cinnamon lick-it hands" as the dog licks her hands. Later on the same day she offers her hands to the dog with "Lick-it hands." Later still in that same day T produces her only sentence with someone other than pets doing the licking as she comments on her own

activity with a popsicle “Travis lick-it.” The remainder of the sentences during the next 2 months all specify the licker in the preverbal position and the thing licked in the postverbal position, for example, “Weezer lick-it arms” (19.22) as the cat does so, “Cinnamon lick that mine hands” (21.00) as the dog is, and “Weezer licking Mommy’s shower” (21.15) as the cat is licking water from the bathroom floor. Two sentences are of a similar form but use the verb particle *up*: “Pete lick up mine bacon” (20.17) after the dog had done so and “Pete lick my milk up” (20.22) as he is doing so. On the video at 23 months she says “Lick it off” as she does so and “Licking on an ice-cream cone” about a picture in a book.

On two (and only two) occasions T uses sentences with the term *blow*: “Blow balloon” (18.25) as she is trying to blow it up and “Blow on this here” (19.23) asking Mommy to blow on her new toy.

5.1.10. *Play, kiss, hug, and kill*

T learned and used the single word *play* during the 16- to 17-month period as a request and comment on going outside to play. It is unclear precisely what T meant by this word as it did not specify any particular objects or activities. In any case, her first combination is “Play, Maria” (18.04) as a request to Maria that she come over and play (T is yelling out the window). The majority of T’s early combinations, between 19.11 and 20.01, all specify the thing to be played with, for example, “Play this silk [blanket]” commenting that the cat just did, “Play this crayons” commenting that someone in a book is playing with crayons, and “Play toe” as the cat is playing with T’s toe. But *play* implies other semantic roles and T made attempts at some of them as well. On 19.26, she requests to “Play on the monkey bars” (marking location) and on 20.01 she requests that Mommy “Play with me” (marking the comitative relation). On 20.24 she requests “Play on floor. . . Play with blocks,” marking in successive utterances location and the object of the playing activity. On two occasions she specifies the player: “Bunny-rabbit playing music” (20.04) about a television character and “Weezer playing my baby” (21.06) describing the cat’s actions. Note that at one time or another T specifies what is to be played with, who is to be played with, who is to play, where she is going to play, and, possibly, what game is to be played (her sentence “Play basketball now” at 20.16 – which also might be interpreted as playing with the object). At one time or another, each of them is appropriately marked, with no more than two in any one sentence. (The sentence “It’s fun to play with puzzles” is dealt with in section 6.1.5 concerning the copula, and the sentence “Can I play with that too?” in section 6.3.2 on questions.) There is one example of a past tense: On

the audiotape at 23 months T tells Daddy "You already played that record."

Three infrequently used words are as follows. T used the vocalization "Mmma!" to accompany kissing early in her language development (see list of presymbolic forms in section 3.3). Her one-word exhortations to allow her to *kiss* people did not begin until the 19- to 20-month period, and her only combination came on 19.30 when she tells Mommy to "Kiss Grover" (a puppet). In a similar vein, there is no record of *hug* as a one-word request, and T's only sentence is "Hug Fred real good" (20.16) as Mommy is hugging her doll. On the more macabre side, there is only one entry for *kill* and that is "A man kill a roaches" (21.10) as the exterminator makes his rounds of the house.

5.1.11. *Step-in, pick, wipe, and burn*

T's prelexical form *steps* seemed to gradually evolve into a related form, *step-in*. During the 18- to 19-month period, T learned to say in combinations that she was currently stepping in or on something. (The parental model for this was not recorded, but perhaps was "Did you step in the mud?" and the like.) In almost all of her 24 sentences, she specified the thing being stepped in or on in the postverbal position (with no other verbal material in the sentence). For example, "Step-in water" (17.22) as she was doing so, "Step-in this pen" (19.01) as she is doing so, and "Step-in this mash potato" (20.02). The only two exceptions to this pattern occur after 20 months. At 20.06 she says "Step-in right here" showing Daddy where she had stepped and "Step cook dinner" (20.13) when she stepped on the top of a pot (meaning unclear).

During the 19- to 20-month period, T learns to request and comment on picking flowers. Her first three combinations specify what is being picked in the postverbal position: "Pick the flowers" (19.19) wanting to, "Pick ones flowers" (19.25) wanting to, and "Pick Linda leaves" (20.03) as she is doing it. Her next sentence puts the thing to be picked in the preverbal position, "Grapes pick one" (20.20) as a request. Her final recorded uses of this verb change meaning in combination with *up*: at 21.06 she requests that she "Pick that coffee up drink" (presumably meaning "and drink it"), and on the video at 23 months she asks "Can I pick it up by my hands?" and then tells her parent to "Pick that all up."

T learned the expression *wipe off* during the 18- to 19-month period to request that we wipe her off after she used the potty. This expression was soon generalized to similar situations involving dirty things. T's first sentences show the interesting pattern of placing the thing to be wiped off between *wipe* and *off*. This is different from other expressions where initially the object was placed after the verb and its particle and only

later placed between them (see section 6.2.4 on verb particles). This may be due to the later origin (after 20 months) of sentences with *wipe off*. Thus T's first sentences were the requests at 20.22 "Wipe this baby-doll off" and "Wipe this shirt off." Her subsequent sentences add more verbal material in a variety of ways. At 21.00 she requests "Wipe me off silk" wanting us to use the silk (blanket) to wipe dirt off her (her only use of the instrument and it is unmarked); at 22.27 she comments "Wipe this off there" as she wipes the mud off her shoes (specifying the location); and at 22.28 she comments "Wipe it off on swing" as she wipes mud onto the swing (her only prepositional marking of the location). In her only question with this verb (23-month video), T also provides the only specification of the one doing the wiping: "You gonna wipe that off?"

T originally learned *burn* at around 17 to 18 months in a game in which she blew out matches her parents lit (it may have been a presymbolic form at the beginning). All of her single-word uses were requests to play this game or comments that the match was burning. T produced only one sentence with *burn* and that was "Burn this fire" (19.19) when she wants to put a stick in the fire.

5.1.12. Push, pull, lift, and pour

During the 17- to 18-month period, T learns to say *push* specifically in a game in which she pushes her friend into the pool (this is possibly a presymbolic form). T did not begin using this term productively, however, until the 19- to 21-month period. Most of T's sentences specify what is being pushed, with some interesting variations. Three of them specify herself or a body part as that which was or is to be pushed: "Push me" (19.27) as a request on the swing, "Stop push me" on the same day in the same situation, and "Push me leg" (20.31) after Daddy had pushed her by her leg on the swing. On one occasion T says "Push me" (19.27 audio) when she is clearly the actor. Two other sentences both specify who does the pushing and what gets pushed: "Mommy push that button" (21.01), commenting, and "Dana push me real high in a bag-swing" (20.28) recounting an event (and also specifying its location). Four of T's sentences during this period contain the locative *down* (parental model uncertain): "Push down, Daddy" (19.16) exhorting him to, "Push down horse now" (20.03) pushing a toy down a ramp, "Push horse down" on the same day in the same situation, and "Push down table" (20.06) as she pushes on the edge of a table.

Three infrequent variations occurred. There are only two entries for the word *pull*. On the video at 18.26 T comments on her own effortful activity with "Pull," and at 20.15 she says "Pull the wagon real hard" as a comment on someone doing so on television. On the video at 23 months

are the only two examples of *lift* and *pour*: “Lift it” as she does so and “I want to pour this in the water” as a request.

5.1.13. Summary

Many of the change of state words reported in the previous chapter were closely related to one another, with the only distinctions among them being the class of objects involved or whether the transformation involved a causal agent or the like. For the current set of words, physical activities involving objects, the situation is very different. With very few exceptions, each action word is distinct from every other action word from the outset. This is because for many of these words the object involved defines the action and for others the action is defined by the specific bodily motions involved. In either case, the conceptual situations underlying these words are easily summarized (see Figure 5.1). T had words concerning cleaning activities (*sweep, brush, wash, clean*), tool-using activities (*paint, hammer, lock*), paper-and-pencil activities (*draw, read, working*), activities with kitchen and bedroom implements (*cut, cook, cover, button*), car-related activities (*ride, drive, bump*), activities with balls and related objects (*catch, throw, roll, kick*), physical-contact activities (*hit, touch, pat, stick, squeeze, rub*), eating activities (*eat, ate, drink, swallow*), other mouth-related activities (*bite, chew, lick, blow*), social activities (*play, kiss, hug, kill*), outdoor activities (*step-in, pick, wipe, burn*), and object-moving activities (*push, pull, lift, pour*). The words within each of these subgroups are distinguished from the others by means of the object involved or the particular physical actions performed.

Table 5.1 summarizes the syntax of each of T's 48 verbs involving activities with objects. Two verbs in this group are used as holophrases only: *pat* and *squeeze*. Twenty-four verbs in this group appear in only one sentence type. Sixteen of these single-sentence-type verbs appear in sentences in which only the object is expressed, 13 of which consistently place the object in the postverbal position (*sweep, brush, paint, lock, button, bump, catch, kick, chew, kiss, hug, pull, lift*) and 3 of which place it in variable positions (*bite, cook, pick*). Of the other 8 single-sentence-type verbs, 2 express location only (*write, roll-it*), 1 expresses the actor only (*working*), 3 express object and location (*stick, rub, burn*), and two express actor and object (*kill, pour*).

Of the 22 verbs in this group that are used in more than one sentence type (ranging from 2 to 8), all of them have at least one sentence involving just expression of the object (that makes a total of 38 of 48 of these verbs that have this sentence type). Only *eat* and *drink* express the object in anything other than its canonical postverbal position (for a total of 5 verbs expressing the object at least once in an incorrect position). *Wash*,

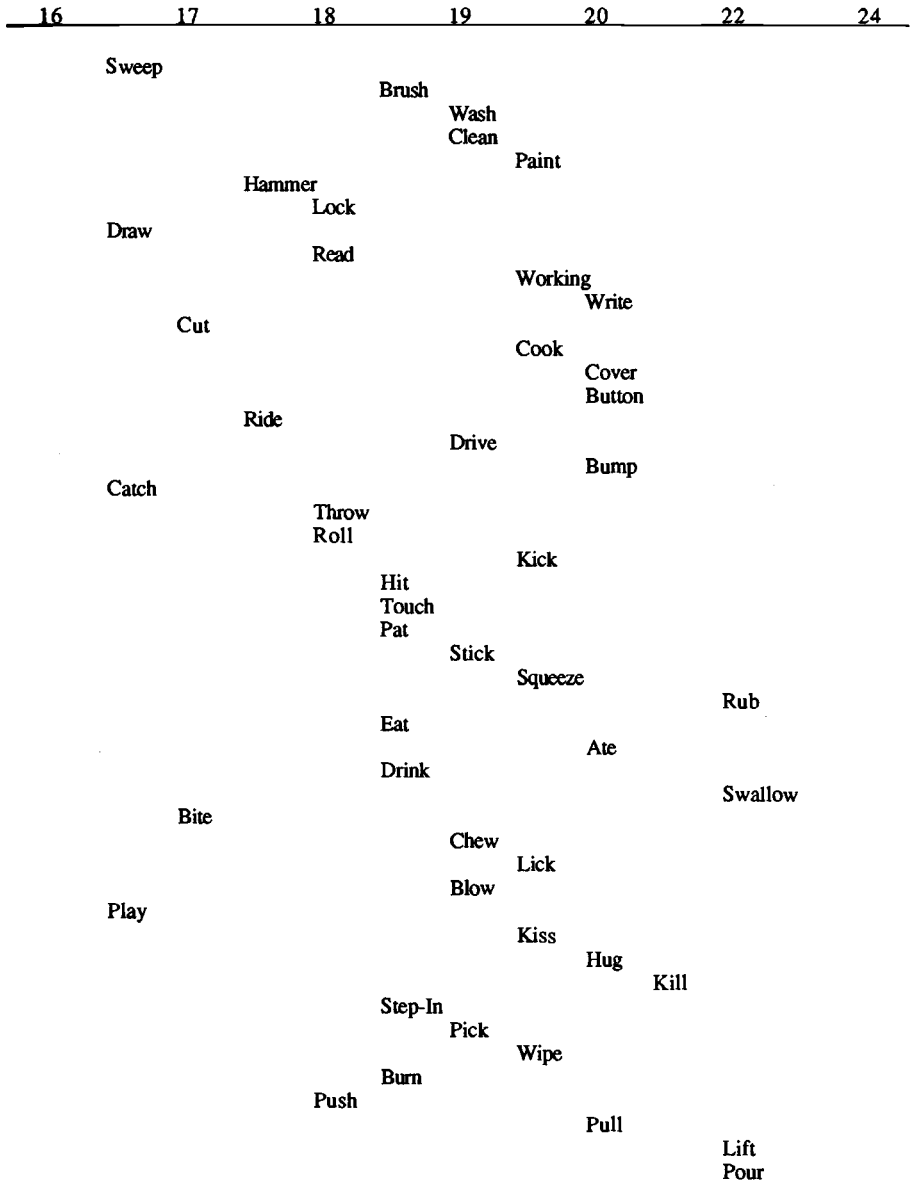


Figure 5.1. Emergence of words for activities involving objects, by age in months.

Table 5.1. *Syntax of activities-involving-objects words as a function of age in months*

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Sweep</i> (1) object post			Sweep Weezer	
<i>Brush</i> (3) object post		Brush-it hair	Brush my teeth	
<i>Wash</i> (7) object post (1) instrmnt post		Wash-it steps Wash-it p-towel	Wash the other ear	
<i>Clean</i> (9) object post (1) object post +instrmnt post-post (1) object post +location post-post w/ "up" (1) actor pre +object mid		Clean this	Clean this tiny tent Clean this p-towel Clean this up-here I clean that up	
<i>Paint</i> (1) object post		Paint the steps		
<i>Hammer</i> (1) actor pre (7) object post (1) Other	Mommy hammer	Hammer table	Hammer doughnut Hammer this noise	
<i>Lock</i> (1) Other		Lock that Lulu		
<i>Draw (Yaya)</i> (12) location post+prep (5) object post (2) actor pre (1) location post +object post-post (5) object post +location post-post+prep (2) actor pre +location post+prep (3) Other (2) w/ Verbs	Yaya book Yaya mans	Yaya paper Draw Weezer Me draw Draw me man	Draw on the paper I draw Draw star on me Draw some hands for the man I draw on the man	
<i>Read</i> (11) object post (1) location post (1) actor post		Read this T-paper Read outside	Real hard draw I want to draw with Stu's pen Read you	
<i>Working</i> (1) actor pre			D working real hard	

Table 5.1 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
Write (1) location post+prep			Write on D's chair	
Cut (3) object post (1) object post +instrmnt post-post+prep		Cut-it toes	Cut Weezer	Cut it with the knife
Cook (2) object post (1) object pre (1) Other		Cooking dinner	Rolls cooking Step cook dinner	
Cover (1) actor post +object post-post w/ "up" (2) object mid (1) object mid +instrmnt post+prep (1) w/ Verbs			Cover me clown Cover me up Lay-down cover up	Cover me up by my silk
Button (1) object post			Button this robe	
Ride (11) object post+prep (5) actor pre +object post+prep (1) location post+prep		Ride horsie Big Bird ride horsie Ride in there	Ride on Mommy	Holly's riding on Dopey
Drive (1) object post (1) actor pre +instrmnt post		Driving car Daddy drive keys		
Bump (1) object post		Bump this car		
Catch (5) object post	Catch ball	Catch the silk		
Throw (1) object post (1) location post (1) object post +instrmnt post-post (1) Other		Throw da ball Throw stairs	Throw the b hands	Throw this away
Roll (1) location post	Roll-it baby			
Kick (1) object post		Kick-it ball		

Table 5.1 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Hit</i>				
(6) object post		Hit ball		
(1) actor pre		Danny hit tennis		
+instrmnt post				
(4) actor pre			Maria hit me	Maria hit the squares
+object post				He's gonna hit me
(1) Other				
<i>Touch</i>				
(1) object post		Touch light		
(1) object post				
+actor post-post			Touch me bowl	
(1) Other		Touch nice		
<i>Stick</i>				
(3) object post		Stick a foot in here	Stick the fingers in my jelly	Stick it in my butt
+location post-post				
<i>Rub</i>				
(1) object post				Rub it in my hair
+location post-post+prep				
<i>Eat</i>				
(2) object pre		Lemon eat-it		
(9) object post		Eat-it Popsicle	Eat-it Lion	
(1) actor pre			CM eat E's cookie	
+object post				
(2) Other		Doo-doo fork eat-it		Can we eat it
(3) w/ Verbs			Look at P eating a bone	I love to eat pretzels
w/ "up"				
(3) object post			Eat-it all up i-c-s	
(4) object mid			Eat mine skin up	
(1) actor pre			W eat my d up	
+object mid				
<i>Ate</i>				
(1) object post			Ate mine p-c on floor	
+location post-post				
(3) actor pre			Weezer ate the b	
+object post				
<i>Drink</i>				
(1) object pre		Bottle drinking		
(2) object post		Drinking the bottle		Drinking my bottle
(2) actor pre		W drinking the eggs		I'll drink all of that
+object post				
(1) actor pre			W drinking the water	
+object post			M's potty	
+location post+post				Look at the g drinking the Kool-aid
(2) w/ Verbs				
w/ "up" and "down"				
(3) object mid			Drink mine tea up	

Table 5.1 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Swallow</i> (3) Other				I won't swallow it anymore
<i>Bite</i> (1) object pre (12) object post	Cookie bite	Bite apple	Bite this roll	
<i>Chew</i> (2) object post+prep				Chew on rock
<i>Lick</i> (1) actor pre (2) object post (4) actor pre +object post (1) Other w/ "up" (1) actor pre +object post (1) actor pre + object mid		Travis lick-it Lick-it hands C lick-it hands	W licking M's shower P lick up mine b P lick my m up	Lickin on a i-c cone Lick it off
<i>Blow</i> (1) object post (1) object post +location post-post		Blow balloon Blow on this here		
<i>Play</i> (8) object post+prep (3) location post+prep (2) actor pre +object post (3) Other		Play this silk Play on m-b's	Play with me Play on floor W playing my b	Play at the playground It's fun to play with p's
<i>Kiss</i> (1) object post		Kiss Grover		
<i>Hug</i> (1) object post			Hug Fred real good	
<i>Kill</i> (1) actor pre +object post			A man kill a roaches	
<i>Step-in</i> (21) object post (1) location post (1) Other		Step-in water	Step-in this m-p Step-in right here Step cook dinner	
<i>Pick</i> (3) object post (1) object pre w/ "up" (3) Other		Pick the flowers	Pick Linda leaves Grapes pick one Pick that all up	

Table 5.1 (*cont.*)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Wipe-off</i>				
(2) object	mid			
(1) object	mid			
+instrmnt	post			
(4) object	mid			
+location	post+prep			
(1) Other				
			Wipe this b-d off	
			Wipe me off silk	
				Wipe it off on swing
				You gonna wipe that off
<i>Burn</i>				
(1) object	post			
+location	post-post		Burn this fire	
<i>Push</i>				
(1) object	post			
(1) actor	post		Push me	
(1) object	post		Push me	
+location	post-post			
(1) actor	pre		Push me leg	
+object	post			
+location	post-post+prep			
(1) actor	pre			
+object	post			
(1) w/ Verbs				
w/ "down"			Stop push me	
(2) object	post			
(1) object	mid			
			Push down h now	
			Push horse down	
<i>Pull</i>				
(1) object	post			
			Pull the w real hard	
<i>Lift</i>				
(1) object	post			
				Lift it
<i>Pour</i>				
(1) Other				
				I want to pour this in the water

Note: *Pat* and *squeeze* were used as single words only. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

cut, step, hammer, drive, touch, blow, and swallow each have one sentence type beyond object only (of various types). *Clean, cover, read, ride, hit,* and *eat* each have two sentence types, of various compositions, beyond the object-only sentence type. *Clean, draw, throw, drink, lick, play, wipe,* and *push* have from three to seven sentence types beyond object only, with *draw* and *push* showing the most diversity. Only two sentences in the entire corpus for this group express three arguments in a single sentence (both actor-object-location), one each with *push* and *drink*. In three sentences, one each with the verbs *cover, touch,* and *push*, the actor is ex-

pressed incorrectly in the postverbal position. Locations are marked by prepositions only rarely before 20 months, and not perfectly consistently after that; instruments are not marked by prepositions at all until the 22- to 24-month period.

5.2. Activities not involving objects

The second group of activity verbs concerns activities either not involving objects at all, or else involving them in a basically inconsequential way. There are four types of activities talked about: physical activities not involving objects (*run, jump, crying, wave, etc.*), perceptual activities (*see, taste, listen, etc.*), emotional states or activities (*scared, love, hurt, etc.*), and epistemic activities (*talk, remember, etc.*)

5.2.1. *Sit-down, lay-down, climb, and stand*

T learned to request or comment on her own activity, or someone else's activity, of sitting down just before 19 months. In all but her final two uses T employs a two-term expression with the second term specifying where the sitting was to take place. For example: "Sit-down chair" (18.29) wanting to, "Sit-down baby-doll" sitting on it, and "Sit-down this bed" (19.18) as she does so. On one occasion she uses the mandatory adult preposition *on*: "Sit on the bed" (19.20). The two other structures T produced were: "Come-on sit me" (20.28) requesting accompaniment and, in her only linguistic specification of the sitter, "Travis sit-down chair" (21.20) as a request.

At around 19 months, T learned the single-word comment *lay-down* to report her activity to her parents. Her two combinations were "Lay-down chair" (20.02) as she does so and "Lay-down cover up" (21.05) as she does so to her dolls. On the videotape at 23 months is T's only recorded use of *climb*: "Climb up here chair, okay?" as she does so. Her three recorded uses of *stand* are "Stand on the book" (video 23 months) as she does so, "Standing to the heater" (23.00) reporting that she is standing next to it, and "Let me stand right here by you" (24.28).

5.2.2. *Jump, walk, swim, and run*

Four related verbs are used infrequently. After having used *jump* as a single-word request, especially in a jumping game (and using it in the sentence "More jump" [17.24]), T later produced: "Pete jump real good" (20.19) and "Mommy jump me bagswing" (20.28) as a request that Mommy jump on her on the bagswing. Second, at around the same time as these later sentences, she also produced two sentences with *walking*:

“Walking here funny” (19.23) as she was walking on the couch and “Fred walking pillow” (20.24) as she walks a doll across a pillow. Third, in rough synchrony with these two words, T begins producing sentences with *swim*, for example, “Swim steps” (18.24) wanting to swim to the steps, “Clown swimming” (19.08) taking her toy to the pool. And finally, at around 20 months, T produced two sentences with *run*: “Run in the street” (20.01) remembering an incident and “Run real fast steps” (20.29) as she runs to them.

5.2.3. *Crying, singing, sleeping, and screaming*

At around 17 months T had used the expression *crying* whenever she heard or saw a baby crying. At 17.26 she said “Baby crying” upon hearing a baby, a day later she said “Bookie crying” upon seeing and hearing him crying, and a month later she said “Wally crying” to a picture in a book. A week later at 19.04 T said “Crying Mommy” wanting to see a picture of Mommy crying. Much later, at 24 months, T tells us “Cry about you” reporting on her behavior at school.

During the 18- to 19-month period T used *singing* in a very similar way – first as a single-word comment on her own or another’s behavior. On 19.04 she commented “Grover singing” and then “Maria singing” as they do on television. A month later she says “Daddy singing chicken” as he sings a chicken song. On 20.11 she produced “Kids singing ‘rainin-pourin’-old-man is snorin’ bumped his head . . . like that” for the only recorded example of a song as the object of an argument.

During the 19- to 20-month period T learned *sleeping*, which was used in a manner similar to *crying* and *singing*, that is, T used it whenever she saw someone sleeping. (In the early months [16 to 19 months] T had used *ni-ni* for the same function.) Her combinations, all between 19.18 and 19.31, were: “Carol sleeping,” “Cinnamon sleeping,” two instances of “Grover sleeping” (in play), and “Maria sleeping right here . . . grass.”

Also during this period T learned and used the word *screaming* as a single-word comment that someone was doing so. Her two sentences were “Lady screaming” (19.21) about a picture on television and “Maria screaming” (19.23) about her friend.

5.2.4. *Pee-pee, wave, clap, and swing*

At 17 months, T reported that she needed to *pee-pee* or had already done so. Five of her nine combinations during the next 3 months specified what she pee-peed in or on, for example, “Pee-pee potty” (17.15) wanting to and “Pee-pee nightgown” (19.03) telling Daddy that she had wet herself. A related use was her reporting on 19.25 that she had wet

the floor in her bedroom, "Pee-pee in this room." On two occasions at around 20 months, T specifies the person doing the action: "Daddy pee-pee too" as a request for accompaniment and "Baby pee-pee" to a picture in a book. (T also said "More pee-pee" on 19.09, dealt with under *more*.)

Two infrequently used verbs were *wave* and *clap*. Both were used as single-word comments on her own activity first during the 19- to 20-month period. In her only sentences, T comments "Daddy wave" (19.04) as he is and "Ladies clapping" (19.14) about a picture on television.

Also during the 19- to 20-month period T learned to comment on things swinging (especially clothes on the clothesline). Her first combinations were "Clothes swinging" (19.10) as they did on the line and "Mommy swinging" (19.12) as she did on a rope. Of T's other three sentences, two comment on her own swinging and what she is swinging on: "Swing this" (19.21) as she swings on a rope and "Swing this monkey bars" (19.22) as she swings on them. The other is a comment (using the transitive form of the verb) on her swinging her clothes with her hand, "Swinging the new pajamas" (20.05) as she does so.

5.2.5. *See, look, and watch*

At around 19 months T learned sentences with the verb *see*; there was no single-word usage. During the next month she produced 32 sentences in which she specified the thing seen in the postverbal position. She sometimes used these simple sentences with *see* as a request that others look somewhere or as a comment on her own activity, but most often she was requesting that she be allowed to see something. For example, T requests that Daddy "See Maria" (18.27), she comments "See Mommy" (19.22) as Mommy drives up in the car, and she requests that she be allowed to "See baby" (19.3) and "See Adam" (19.24). The active sense that she be allowed to see something comes through quite clearly when at the end of the early period she says "See Peabody book" (20.01) as she is looking for it. On 20.09, T for the first time begins to add a location to the thing seen with "See Paul Mountains" as we are on our way to see Paul in the mountains. From 21 to 22 months, she produces similar sentences only with the appropriate locative prepositions, for example, "See egg in the refrigerator" as a comment, "See that right over there" as a comment, and "See the bird over there" as a request that someone look. There are 6 sentences of this type. During the 22- to 23-month period, she also produces 3 sentences with the seer specified in the preverbal position "I see you up there," "I see you up there again," and "I can't see." (She also at this time produced the two-verb sentence "Come-back there see Flintstones," dealt with under *come*.)

During this same period, T also learned to tell people to "Look," both

as a single-word request and in sentences. Although her first sentence “Look the Cinnamon” (19.10) was a request that she be allowed to look at the dog, as *see* began to take over that function T began to use *look* exclusively to direct other people’s attention. During the 19- to 21-month period, T produced nine sentences that specified only the thing the person is supposed to look at in the postverbal position, usually preceded by the preposition *at*, sometimes with the addressee named; for example, “Look at blocks” (19.28) and “Maria, look at this” (19.28). T’s attempts to express other elements in the situation began with “Danny, look smoke mouth” (18.26) telling him to look at a picture showing a man with smoke coming out of his mouth. In one sentence T tells someone where to look, “Daddy, look over here” (20.06). In three other sentences T directs the other person’s attention to herself in one way or another: “Look me upside-down” (20.06), “Look Maria’s sweater on me” (20.19), and, in the only case where both thing looked at and location are specified, “Look at me in there” (22.07). Also interesting is the idiomatic “Look around, Daddy” (20.12) telling him to look for her bottle. An especially interesting structure is represented by T’s three sentences during the 20- to 22-month period “Look at a girl drinking a kool-aid,” “Look Weezer climbing a tree,” and “Look at Pete eating a bone.” These are the closest thing to recursion that T developed during this period. (These are discussed more fully in section 6.3.3 on sentences with more than one verb.)

During the 18- to 19-month period T’s parents might say to each other “Watch her” about Travis, or they might ask Travis if she wants to “Watch TV?” T learned to use the word *watch* almost exclusively for requesting to watch television (or a specific program). Thus, during the 19- to 20-month period she says “Watch TV” as a request, “Watch Sesame Street” as a request, and “Watch this program” as a request not to change the channel. On two occasions she requests that someone watch television with her: “Daddy watch Sesame Street” (19.28) and “Watch Land Lost with-me” (21.20) as a request for accompaniment. Four other sentences express various other aspects of the situation as well as what T wants to watch: “Watch TV inside” (19.31) as a request to go inside to watch television, “Watch Squares on there” (20.01) as a request to watch a specific program on the television, “Watch TV now” (20.01) as a request, and “Watch TV pillow” (20.06) as a request that she watch television not in the chair but on her pillow. Only one example relates to something other than television: “Watch me doors open” (19.31) as a request that someone watch her getting into a cabinet.

5.2.6. *Taste, smell, listen, and feel*

On one occasion T says “Taste good” (19.00) as she eats a flower, and on another as she is eating chalk (19.26). On 19.29 she says “Eggs smell-

it" as she does so. On 21.18 T asks to "Listen to my record" for the only recorded example of this form. The only three examples of *feel* are "Pete feel better now" (20.07) after the dog ate and, in a very different use of the term, T's two requests on the audiotape at 23 months to "Feel that" and "Feel that, Daddy" about an object he was holding.

5.2.7. Hurt and scared

During the 17- to 18-month period T learned the single-word report "Hurt" when she was hurt. Her first combination "Hurt silk" (18.31) reports that she thinks her silk (blanket) is hurting her. At 19.07 she reports "Hurt eyes" as she had got pepper in them and 2 weeks later she reports "Eyes hurt" as smoke got in her eyes. From 19.23 on, T had three different uses. First, when she got hurt she reported things like "Pete hurt the fingers in there" (19.23), "Danny hurt me" (19.27), "That baby lotion hurts me" (21.00), "That hurt my finger" (21.05), and "It hurts" (23-month audiotape). She even reports on one occasion "Hurt myself" (21.11). Second, when someone else was hurt, she used a different ordering: "Daddy hurt" (19.31) as he screams in pain, "Pete hurt a car" (20.07) after the dog had had an accident, and "Pete hurt a car street" (20.07) about the same incident. Third, T reported that either she or someone else was hurt "by" something: "Hurt by car" (22.04) about the dog, "Hurt by street" (22.07) reporting on her own accident, and "Hurt by swing" (21.07) reporting on a different accident. It should also be mentioned that on the videotape at 23 months, T says "I did get hurt" about a past incident and "It hurt me" also about a past incident (see section 6.2.3 on past tense).

Also during the 17- to 18-month period T learned to say "Scared" when she was afraid of something. Her first sentences were "Scared man. . . Scared man on TV" (19.25) about an event from days before. She went on in the next few weeks to say "Scared mask," "Scared monster on TV," and "Scared that other car." At 20.15 she begins adding the preposition *of* into sentences of the same general type: "Scared of the funny these" to pictures in a book, "Scared of funny other man" (20.21) about a robot, and "Scared of that other car" (20.25) as it goes past. The only sentence in which T uses *scare* transitively is "Maria scares me up high" (21.10) about her friend in the second-floor window (i.e., the other sentences would receive the gloss "I am afraid of . . .," whereas this one would receive the gloss "Maria frightens me"). Note also the use of the third-person singular *-s* in this sentence.

5.2.8. Sorry, try, and mean-to

Three infrequently used predicates (not all are adult verbs) dealing with internal states of T were used as follows. *Sorry* was used from around

18 months to tell people or animals that she regretted some incident. Thus she says “Sorry, Weezer” (18.26) to the cat for hurting him and “Sorry, baby-doll” (18.28) as she brushes her hair (Mommy says that to her in a similar situation). Two slightly different terms concerned T’s intentions. Thus, she says “Try this” (19.13) as she attempts to put on Mommy’s shoes and “Try this leaves” (20.03) as she attempt to reach some leaves out of reach. Also T used as a single-word comment in the 22- to 24-month period the expression *mean-to* to indicate that she did not mean to do something (the adult model was presumably “I didn’t mean to”).

5.2.9. *Like, love, and hungry*

On the audiotape at 19.26 T reports “Like-it bread” as she is eating it. During the 20- to 21-month period T reports: “Like music,” “Like TV,” and “Like Weezer kittens.” On three occasions beginning in this same period she expresses the liker: “Weezer like my breakfast” (20.14), “I like PP-pops” (21.02), and “Mommy like it” (video at 23 months). During this same 20- to 21-month period T also reports: “Cookie-Monster love cookies” about the television character and “Travis love a da peanut-butter-sandwich” about herself. At around 20 months, T used *hungry* as a single word report on her inner state, and within a month produced her only two combinations: “Weezer hungry now” (20.23) as the cat acts like he is, and “Me hungry” (20.29) presumably reporting on her inner state.

5.2.10. *Want and need*

Throughout the early period until 20 months, T made known the fact that she wanted something for the most part through her intonation. Most of the words such as *have* and *hold*, for example, were also on occasion used as comments on the fact that T or someone else was in possession of something. An imperative intonation with one of these words, or even with an object or activity label, was generally sufficient to convey her desire. At around 21 months, however, she also learned the two single-word requests “Want-it” and “Need-it.” These conveyed her desire, while the object of desire was apparent from the context. These are used a bit later, and not too frequently, in sentences. For *need*, there are two entries, both on 20.21: “Need more jello” asking for it and “Need this up-here” wanting a book off a shelf. *Want* for the most part appears in sentences only in the videotape at 23 months and in the unsystematic notes kept after 24 months. In these late notes, there are a number of very interesting examples of multiple-verb constructions

with “I want . . .,” for example, “I want to get in your lap.” These are analyzed more fully in chapter 6. The precise difference between these two words is not clear, but perhaps, as in adult language, it has something to do with the nature of the desire.

5.2.11. *Told, called, talk, said, and remember*

During the 20- to 23-month period, T learned to report that people had told her things. In all of her eight sentences the teller is verbally expressed in the preverbal position; what she was told takes quite varied forms. She says things such as: “Maria told me draw” (19.26) after her friend had, “Maria told me have one too” (video, 19.26) after her friend had, “Daddy told me B” (19.29) reporting on a previous alphabet lesson, “Stu told me hippopotamus” (20.02) reporting that he had corrected her term “hippo,” and “Maria told me quack-quack” (20.08) about what her friend had told her about ducks earlier in the day. On 20.05 T reports that “Daddy told me star leg” (20.05) about a star on Daddy’s pants, expressing two experiential items. On the video at 23 months she informs us “I already told you” and “I tell you” about some previous incident.

Four infrequently used words fall into this category. First, on 19.26 T told us that “Dana called me Lauren” when Dana had told her to call Lauren (this is not a report that Dana called her by the name Lauren). Second, in the 20- to 23-month period T reports that she is “Talking Catherine” (video, 19.26) on the phone, that “Danny’s talking a Chris” (22.07) as he does so (note copula), and “Talking on the telephone” (video, 23 months) as she does so. At 25 months she says “I go outside talk to Maria.” Third, on the audiotape at 23 months T comments about a person on a recording (twice) that “Maria said that,” identifying the speaker. Finally, at 19.30 T says “Remember monsters up in sky” about a television show, and on the video at 23 months she produces “I don’t remember,” “Remember, Daddy?” and “Remember that machine.”

5.2.12. *Summary*

Figure 5.2 provides a list of the physical-activity verbs not involving objects, along with a depiction of their time of first use. Once again, a summary is easy because several rough groupings make themselves obvious. There are bodily activities (*sit-down, lay-down, climb, stand, jump, walk, swim, run, crying, singing, sleeping, screaming, pee-pee, wave, clap, swing*), perceptual activities (*see, look, watch, taste, smell, listen, feel*), emotional states and activities (*hurt, scared, try, mean-to, like, love, hungry, want, need*), and epistemic–communicative activities (*told, called, talk, said, remember*).

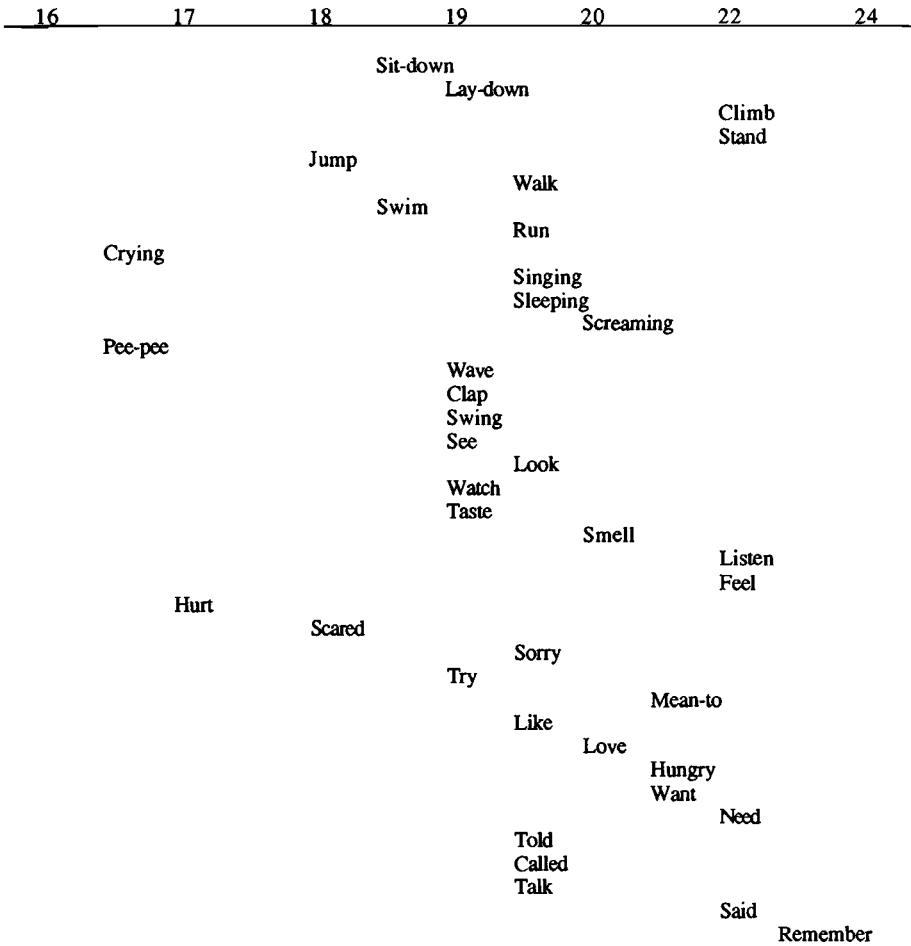


Figure 5.2. Emergence of words for activities not involving objects, by age in months.

Each of the words within these subgroups is distinguished from the others by the specific bodily or psychological states and motions involved.

Table 5.2 summarizes the syntax of the activity words not involving objects. Of the 36 words in this group, 2 are used as single words only: *try* and *mean-to*. Eighteen verbs are used in only one sentence type: *crying*, *screaming*, *wave*, *clap*, and *hungry* are used with agents only; *climb*, *stand*, *run*, and *lay-down* are used with locations only; *listen*, *feel*, *smell*, and *try* are used with patients only; *love*, *called*, *said*, and *told* are used with actor and object only; and *taste* is used with the adjective *good* only. The re-

Table 5.2 Syntax of activities-not-involving-objects as a function of age in months

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Sit-down</i> (17) location post+prep (1) actor pre +location post (1) w/ Verbs		Sit-down chair	Travis sit-down chair Come-on sit me	
<i>Lay-down</i> (1) location post (1) w/ Verbs			Lay-down chair Lay-down cover up	
<i>Climb</i> (1) location post				Climb up-here chair
<i>Stand</i> (2) location post+prep (1) Other				Stand on the book Let me stand right here by you
<i>Jump</i> (1) actor pre (1) actor pre +location post (1) Other		More jump	Pete jump real good M jump me bagswing	
<i>Walking</i> (1) location post (1) actor pre +location post		Walking here funny	Fred walking pillow	
<i>Swim</i> (1) location post (2) actor pre (1) Other		Swim steps Clown swimming More swimming	Hippo swimming	
<i>Run</i> (2) location post+prep			Run in the street	
<i>Crying</i> (3) actor pre (1) actor post (1) Other	Baby crying	Wally crying Crying Mommy		Cry about you
<i>Singing</i> (2) actor pre (2) actor pre +object post		Grover singing	D singing chicken	
<i>Sleeping</i> (4) actor pre (1) actor pre +location post		Carol sleeping M sleeping right here		
<i>Screaming</i> (2) actor pre		Lady screaming		

Table 5.2 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Pee-pee</i>				
(6) location	post+prep	Pee-pee potty	Pee-pee in this room	
(2) actor	pre		Daddy pee-pee too	Baby pee-pee
(1) Other			More pee-pee	
<i>Wave</i>				
(1) actor	pre		Daddy wave	
<i>Clap</i>				
(1) actor	pre		Ladies clapping	
<i>Swing</i>				
(2) object	pre		Clothes swinging	
(2) location	post		Swing this m-b's	
(1) object	post			Swinging the new p's
<i>See</i>				
(32) object	post	See Maria	See Peabody book	See that bear
(6) object	post		See Paul mountains	
+location	post-post+prep			
(3) actor	pre			
+object	post			I see you up there
+location	post-post+prep			Come back there see Flintstones
(1) w/ Verbs				
<i>Look</i>				
(9) object	post+prep	Look the cinnamon	Look the pretty Aunt Toni's dress	
(4) object	post		Look me upside-down	Look at me in there
+location	post-post+prep			
(1) actor	pre	Maria look at this		
+object	post			
(1) location	post		Look over here	
(3) Sentence	post		Look at girl drinking a Kool-aid	
<i>Watch</i>				
(8) object	post	Watch TV	Watch TV now	
(1) actor	pre	Daddy watch SS		
+object	post			
(3) object	post	Watch TV inside	Watch TV pillow	
+location	post-post			
(2) Other		Watch me doors open	Watch LL with nie	
<i>Taste</i>				
(2) w/ adjective		Taste good		
<i>Smell</i>				
(1) object	pre		Eggs smell-it	
<i>Listen</i>				
(1) object	post		Listen to my record	
<i>Feel</i>				
(1) object	post			Feel that

Table 5.2 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Hurt</i>				
(4) instrmnt	post+prep	Hurt silk		Hurt by swing
(5) object	post	Hurt eyes	Hurt myself	
(5) object	pre	Eyes hurt	Something else hurt	I did get hurt
(1) actor	pre			
+object	post	Pete hurt the fingers		
+location	post-post+prep	in there		
(6) actor	pre	Danny hurt me	That hurt my finger	It hurt me
+object	post			
(2) object	pre		Pete hurt a car	
+instrmnt	post			
(1) object	pre			
+instrmnt	post		Pete hurt a car a street	
+location	post+post			
<i>Scared</i>				
(7) object	post+prep	Scared man	Scared of that other c	
(2) object	post	Scared man on TV	Scared m's on TV	
+location	post-post+prep			
(1) actor	pre			
+ object	post			M scares me up high
+location	post-post			
<i>Try</i>				
(2) object	post	Try this	Try this leaves	
<i>Like</i>				
(4) object	post	Like-it bread	Like music	
(3) actor	pre		I like PP-pops	Mommy like it
+object	post			
<i>Love</i>				
(2) actor	pre		CM love cookies	
+object	post			
<i>Hungry</i>				
(2) actor	pre		Weezer hungry	
<i>Want</i>				
(10) actor	pre			I want the cup
+object	post			
(5) As Matrix Verb				I want to pour this in the water
<i>Need</i>				
(1) object	post		Need more jello	
(2) object	post			
+location	post-post		Need this up-here	
<i>Told</i>				
(5) actor	pre			
+recipnt	post	Daddy told me 'B'	Maria told me quack-quack	
+object	post-post			
(2) actor	pre			I tell you
+recipnt	post			
(1) Other			D told me star leg	

Table 5.2 (cont.)

	16 - 18	18 - 20	20 - 22	22 - 24
<i>Called</i>				
(1) actor	pre			
+recipient	post	D called me	Lauren	
+object	post-post			
<i>Talk</i>				
(1) recipient	post	Talking Catherine		
(1) location	post+prep			Talking on the telephone
(1) actor	pre			Daddy's talking a Chris
+recipient	post			
(1) w/ Verbs				I go outside talk to Maria
<i>Said</i>				
(1) actor	pre			Maria said that
+object	post			
<i>Remember</i>				
(1) object	post	Remember m's up in sky		
+location	post-post			
(1) object	post			Remember that machine
(1) actor	pre			I don't remember

Note: *Sorry* and *Mean-to* were used as single words only. For an explanation of the choice of example sentences for inclusion in the table, see text. To save space, some nouns are indicated with single letters.

maining 16 verbs in this group were used with from two to five sentence types: *jump*, *walking*, *singing*, *sleeping*, *like*, *need*, and *pee-pee* with two each; *sit-down*, *swim*, *swing*, *scared*, *talk*, and *remember* with three each; and *see*, *look*, *watch*, and *hurt* with more than three. Only one sentence involved three arguments: "Pete hurt the fingers in there." *Want* had several very interesting uses as a matrix verb involving whole sentences as the object of wanting.

The most important difference between these verbs and those for activities on objects is that in sentences with these verbs T is much more likely to express the actor verbally. Of the 36 verbs used combinatorially, 26 (72%) had at least one sentence type in which the actor was expressed (as opposed to 41% in the activities on objects). On the other hand, objects, which were expressed for 83% of the activity on object verbs, were expressed for only 53% of the current group. Only one object was misplaced ("Eggs smell-it") and no agents were misplaced (with the possible exception of the ambiguous "Crying Mommy"). Only sentences with *hurt* expressed an instrument, not marked with a preposition until 22 months. Locations were marked rarely before 20 months and inconsistently afterward.

6

Other grammatical structures

Although it is the premise of this monograph that much of children's earliest language is structured by verbs and other relational words, they do have other ways of structuring multiword constructions. For T these were quite limited in the first few months, but by the end of the current study they were many and diverse. In this chapter, I report on three classes of grammatical phenomena that were not touched on in the previous analyses of verb-based sentences. First, I report on T's early sentences without verbs or relational words of any kind. This includes object-object constructions, and some possessives, locatives, and attributives – along with an account of the copula, which many of these verbless sentences would require in adult English. Second, I will report on T's grammatical morphology. This includes accounts of noun morphology (possessive, plural), the development of various noun-phrase phenomena (pronouns, articles, adjectives), verb morphology (past and future tenses, progressive aspect), the development of various verb-phrase phenomena (verb particles, prepositions, auxiliaries, adverbs), and subject-verb agreement. Finally, I will recount T's complex sentences including negatives, questions, and sentences with more than one verb; of course, many of these include grammatical morphology as well. Each of the subsections within these three sections has associated with it either an appendix, a table, or both, which list the data on which the discussions and analyses are based. There is a brief summary at the end of the chapter.

One caveat. In describing T's language in the following analyses I use a number of adult linguistic terms (e.g., articles, prepositions, the copula, noun phrase). This is only for purposes of heuristic convenience; it is not to prejudge their status in T's grammar. In the discussions in this chapter, as well as those in chapter 8, I make some attempts to determine whether and in what ways each of these is an operative part of T's early grammar.

6.1. Sentences without verbs

Some researchers have drawn a sharp contrast between early sentences with the pivot look, that is, sentences containing some type of relational word or verb (such as the change of state and activity words already analyzed), and sentences with a more telegraphic look, that is, sentences containing no relational words or grammatical morphemes (e.g. Bloom's, 1970, famous "Mommy sock"). Most young children presumably produce some of each type of structure, and, although T was quite fond of verbs and relational words in general, she did produce a significant number of sentences without an adultlike verb or relational word. They fall into four general categories:

1. Object-object constructions such as "Mommy sock," "Book table,"
2. Possessive constructions such as "Mommy's sock," along with expressions containing explicitly possessive words such as *my*, *mine*, *your*.
3. Locative constructions in which the locative word is not used in a verblike way but rather merely to place an object in a location, for example, "Book on table," "Bugs here."
4. Attributive constructions in which a property is attributed to an object, for example, "Flowers pretty," "Little kitty."

In this section I relate, each in its own subsection, T's use of these four sentence types. Object-object constructions are reported first; T presumably used these for nothing other than the indication of some vague and unspecified relation among objects. The other three sentence types are in some sense predicative. Each of these indicates a state of affairs that in adult language would require the use of the copula, with perhaps some additional grammatical morphology. (For example, most possessives such as "Mommy's sock" or "My sock" would receive an adult gloss such as "This is Mommy's sock" or "It is my sock.") Because of the close functional relation of these sentence types to the copula, in a fifth and final subsection I report on T's earliest uses of sentences in which the copula is the only predicative device. With some minor exceptions (explained as needed), the diary entries on which the analyses in this section are based are listed in the appendix, organized into the same five subsections as the text.

6.1.1. Object-object constructions

I do not believe that T's early object-object constructions are grammatical in any interesting sense. In sentences of this type, T merely indicates two objects but does nothing linguistic to specify a relation between them (an exhaustive list is provided in the appendix). She leaves it up to the adult to infer from context the relation between the objects that she

intends to indicate – if indeed she has such a relation in mind at all. Although this classification should not be taken too seriously, based on the contextual situations T would seem to have three types of object–object constructions (along with a few uncategorizable examples).

First, many object–object sentences would seem to be indicating a location, for example, “Eggs mouth” (17.25) as she opens up for and requests a bite, “Ball garage” (18.11) as she places the ball in the garage, “Sugar coffee” (19.04) as Mommy is putting sugar in her coffee, and “Star leg” (20.05) as T notes the star sewn on a friend’s pants. One puzzling feature of some of these sentences, especially the later occurring ones, is that in many cases T knew an appropriate word to indicate the appropriate spatial relation and she had already used it in three-term expressions (there are many more cases if this second stipulation is not applied). There are six instances, occurring from 19.28 to 20.19, in which T omits either *in* or *on* (e.g., “Star leg”) after she had produced at least one analogous sentence with each. Perhaps a certain amount of lag time is required for T to master the new construction or perhaps the adult simply did not understand T’s intention in the situation (she didn’t really mean *in* or *on*).

In a second group of object–object constructions T seemed to be indicating the objects involved in an action (what an adult could construe as the actor, object, or instrument of an action). For example, T said “Mommy chair” (17.15) as Mommy was painting the chair, “Hands water” (18.02) as she is washing her hands with water, “Flower Travis” (18.12) as Mommy had just thrown a flower on her, “Top milk” (19.01) taking the top off the milk, “Daddy wood” (19.31) as Daddy brought wood into the house, and “Orange me” (20.16) requesting an orange from an adult. Once again, in a few cases, especially the later ones, T knew the verb that an adult would presume was intended: She presumably could have asked to “hold” or “have” the orange and commented that Daddy “bring” the wood, for example, as all of these verbs were known at that time. In some instances it may have been the case that T was not ready to specify more than one argument for a particular verb: Thus, although she knew both *hold* and *bring* at the time, she had never expressed both an actor and an object for either of these when she said “Daddy wood” as he brought it into the room. Once again, of course, it is also possible that the adult diarist may have comprehended the activity that T wished to indicate wrongly (perhaps T wanted to indicate that Daddy was “piling” the wood – which she did not know how to say).

In a third subgroup of object–object constructions T seemed to be using one object label in an adjectival way to modify another, for example, “Peter Pan book” (17.28) requesting a particular book, “Turtle pillow” (18.07) pointing out a pillow shaped like a turtle, “Elephant chair”

(19.23) pointing out a chair shaped like an elephant, and “Chicken money” (20.12) indicating a play dollar-bill with a chicken’s face printed on it. In adult language these would presumably be acceptable, either as compound nouns or as sentences with a copula (e.g., “That is a turtle pillow”). T did not know the copula at the time these sentences were produced.

There are also a number of ambiguous examples in which it is difficult for an adult to reconstruct T’s intended meaning at all, for example, “Bottle rabbit” (18.03) as she sucked a balloon with a picture of a rabbit on it, “Berry ball” (18.10) after she had called a berry a ball, “Ice-cream milk” (18.17) commenting on a bowl of melted ice cream, and “Buttons paper” (20.12) about the cardboard some buttons came packaged on. There are also three three-term object-based sentences that are difficult to interpret, for example, “Weezer cat milk” (19.01) as the cat named Weezer is drinking his milk. It should be noted that the last recorded object–object construction is on 20.19. This could easily have been due to the changing criteria for inclusion in the diary – if T had kept producing these they might well have been considered as old and uninteresting. However, it is also quite likely that T quit using these as inspection of the videotape and audiotape at 23 months does not reveal a single sentence of this type.

It may be that T uses the object–object constructions because they allow her to indicate more than one object at a time – which in many cases she has not learned how to do with a verb in the sentence (or perhaps there is some processing limitation). In any case, the importance of object–object constructions for the child’s early language is in the setting they provide for finding the adult means of expressing certain grammatical relations. The child’s verbless sentence may be misunderstood by an adult or the adult may respond with a noncomprehension response – in which case she presumably discerns that her form is unconventional and may now search for a means of correcting that situation. Her verbless sentence may be understood, but she may nevertheless receive feedback that her expression is not like that of adults: The adult may reply “Yes, Daddy is bringing the wood.” Or it is also possible that she may recognize in some general way that “Daddy wood” just doesn’t “sound right” based on principles she is beginning to derive from other parts of her grammar, which again provides a motivation for her to find a better means of expression.

6.1.2. Possessives

From around 17 months on, T was able to make attributive statements without verbs that seemed to convey the fact that an object was in some

sense the possession of someone (an exhaustive list is provided in the appendix). Her earliest attempts were the well-known object–object constructions whose meaning seemed to be apparent from the context (e.g. pointing and saying “Mommy sock”). These did not have the overt marking of the possessive *-s*, but they typically did have a characteristic intonational marking – stress and higher pitch on the possessor. Thus, at 17.01 and 17.03, T points at objects and says “Mommy milk” and “Lauren house.” During the next 10 days there are 7 similar examples, all with *mommy* in the first position. During the 3 weeks following that T alternates using and not using the possessive *'s*. From 17.24 on she uses it quite consistently (see also section 6.2.1 on noun morphology). During the next 2 months, 30 two-term possessives used the *'s* and 7 did not (excepting several expressions with the name *Travis*, which presumably presented morphophonemic difficulties). During the 20- to 24-month period, constructions of the form *X's Y* also turn up as noun phrases in longer sentences (sometimes without the *'s*), for instance, “Hold this Maria’s necklace” and “Move Daddy tray” (see subsection 6.2.2 on the noun phrase).

T had another way of expressing possession without a verb and that was the possessive terms *my*, *mine*, and *your*. Beginning at 19.08, T began using two-term expressions such as “My book,” “My water,” and “My hose” when she did not want someone to take something from her. *Mine* seemed to be synonymous, used in the same context (sometimes syntactically incorrectly, as in “Mine pillow”), but much less frequently. A month later, forms of this sort also were used as noun phrases in sentences with verbs, for example, “Mommy hold my hand” (20.12), “Brush my teeth” (20.13), and “Get these pickles off my hamburger” (22.04) (cf. subsection 6.2.2 on the noun phrase). The only other possessive word that T used during this time was *your*. There are only two examples before 24 months: “Close your eyes” (22.05) to her friend in a game and “Get your paper back on your lap” (24.00) to an adult. Later, during the sporadic notes at 25 and 26 months, there are a few similar examples of sentences with *your*.

6.1.3. Locatives

T was also able to use sentences without verbs to express the idea that an object was in a state of being located somewhere, unlike the sentences analyzed in section 4.4 in which T used the location word in a verblike way to structure the entire sentence (e.g., “Nail out” meaning “Take the nail out”). In all cases, the sentences of interest here were comments on states of affairs and contained a location word but not the copula that the comparable adult gloss would contain. (Recall also that a few object–

object constructions also seemed to be used as locatives, e.g., “Star leg.”) Many of these contained the prolocatives *here* and *there* in sentences such as “Water there” (19.16), “This ball under here” (19.11), “Spoon down there” (19.29), and “Maria’s umbrella here” (20.06). Another group contained the comment uses of the spatial oppositions *up-down*, *on-off*, *in-out*, and *over-under* – along with a few other spatial prepositions such as *around*, *next to*, *together*, *by*, and *at* – in sentences without other verbs and without prolocatives. Examples are “Button off” (17.27), “Little stickers up-here” (19.16), “Apple juice up counter” (20.26), “Other bird in the bush” (21.25), “Sand on my eye” (22.07), “Linda at home” (22.30), and “By the telephone” (23.00). In general, T used her locative expressions quite freely, both in sentences with and without verbs (see appendix for section 4.4 on location of objects).

6.1.4. *Attributives*

T had 24 words that seemed to function as modifiers of object labels (an exhaustive list of her verbless sentences with these is provided in the appendix). Her earliest uses in the 16- to 17-month period were the single-word expressions *hot*, *cold*, *sharp*, and *poison*. *Hot* was used for such things as coffee, matches, fire, barbecue grill, stove, sun-heated pavement, bath water, and so forth. *Cold* was used for ice, refrigerator, herself when wet, bath water, and so forth. These two terms were often used incorrectly from the adult point of view. *Sharp* was used for pins, scissors, corkscrews, knives, and other similar objects. *Poison* was used for things she was forbidden to touch, originally kitchen cleaners; she then generalized this to such things as scissors.

Between 17 and 18 months, T learned eight new modifiers: *pretty* (for flowers or colorful objects), *funny* (people who look different such as clowns, puppets), *happy* (smiling faces), *sad* (frowning faces), *dirty* (objects with visible dirt), *cute* (herself in hat, dress, etc.), *heavy* (having trouble lifting object), and *fast* (going fast in car). T began producing two-word sentences with a modifier and an object label in the middle of this month, for example, “Flowers pretty” (17.16), “Pretty flowers” (17.22), “Coffee hot” (17.14), “Hot coffee” (17.14), and “Heavy blocks” (17.21).

In the 18- to 19-month period, T began combining several modifiers quite widely, usually in the initial sentence position. She produced two-term constructions (48 total) of the form “Two _____” (to pairs of objects such as shoes, carrots), “Pretty _____,” “Nice _____,” “Funny _____,” “Big _____,” and “Little _____.” In a reverse of the normal ordering she said “Bike fast” (18.25) during this period, as well as the conflicting “Heavy Poker” (18.25) and “Chain heavy” (video at 18.26). There are two cases during this period

of a sentence with two modifiers and no verb: "Two cats funny" (17.28) and "Funny little rock" (19.00).

During the 19- to 20-month period T began producing a much wider variety of two-word sentences with a modifier and an object (in that order in 63 of 71 cases). The modifiers that were combined in such two-term expressions were *funny, pretty, dirty, little, big, tiny, blue, two, good, nice, heavy, wet, and this*. During this period, there are also a small number of three-term sentences containing a verb (or relational word) and a noun phrase consisting of a modifier + object construction. Some early examples are "Two rugs down" (19.01), "Big rock stuck" (19.04), "Bite this ball" (19.08), and "More orange popsicle" (19.23).

After the 20-month mark, modifiers became infrequent entries in the diary. There are virtually no entries with only a modifier and an object label. This could very easily be due to the fact that such short and established sentence frames were routinely ignored by the diarists during this period. The video and audio tapes at 23 months, however, have almost no examples of such constructions in their two hours of sampling. More surprising still, despite the cited examples, T does not very frequently use modifier-object constructions in her later sentences with verbs (and these would surely have been recorded assiduously) – that is, she does not often say things like "Hit the big ball." The only exceptions to this are the demonstrative adjectives *this* and *that*, which are used quite frequently in sentences such as "Watch this program" (20.01). (This usage will be discussed at greater length in section 6.2.2 on the development of the noun phrase in T's language.)

6.1.5. *The copula*

Virtually all of the sentences containing only an object label along with either a possessive morpheme, a locative term, or a modifier would require the copula in adult English. However, T almost never supplied it during her first 22 months of life. Prior to the diary and video and audio entries at 23 months, there are seven examples of copula use: "Danny's gone" (19.24), "Here it is" (19.26), "Triangle's little" (20.10), "Daddy's working real hard" (20.15), "That string's stuck" (21.02), "That's Daddy over there" (21.22), and "Danny's talking to Chris" (22.07). The interesting thing is that these do not cluster around a single function. In these examples T uses the copula to attribute a property to an object, to locate an object, to identify an object, and to complete present-progressive and past-perfect verb forms. Nor do they cluster around a single form. No two of these

sentences contain any of the same words (except the demonstrative *that* in two examples).

At around 23 months, T begins to expand her use rapidly and widely. Diary entries from around this time include the same functions expressed less frequently in previous months and add the use of the copula in question forms, for example, "Where's my bottle?" and "What's that under there?" Nevertheless, the videotape at 23 months would seem to indicate that sentences with copulas may not have been exhaustively recorded in the diary at this time. In the 1-hour tape at this time there are 33 uses of the copula (8 examples on the audiotape at this same time); this is more than are in the diary in all of the weeks surrounding this taping session.

The major functions of sentences with the copula at around 23 months are to identify ("It's a tape recorder"), to locate ("Here is the jello"), to attribute ("It's hard"), and in questions ("What are you doing?" or "Is that alright, Daddy?"). There are no present-progressive or past-perfect uses, but that is presumably a sampling problem as T has produced these previously. With regard to form, by far the predominant form of the copula at this time was the contracted 's. Of the 59 total diary, video, and audio entries, 42 are of this type. T's copula forms with other than 's, which first appeared on the video and audio tapes at 23 months (not counting 1 stray example of the probably routine "Here it is" on the video at 19.26), are as follows. There are 9 recorded examples of sentences with the full-blown *is*, for example, "Here is the jello," "This is Pete," and "What is that for?" There are 3 examples of *are*, for example, "We are at school?" and "There they are." There are 3 entries for the contracted form 'm, for example, "I'm on the keys" and "I'm sorry I coughed at you." There is one example of *be*: "I'll be right back." Table 6.1 reports all recorded uses of the copula classified by function and form, and an exhaustive list with dates is provided in the appendix.

6.2. Grammatical morphology

In this section I consider some of the internal aspects of T's sentences. I report first on her noun morphology, which consists of the bound morphemes plural *-s* and possessive *'s*. I then report on the development of the noun phrase as an element in T's sentences, focusing on her use of articles, demonstrative adjectives, and pronouns as word types combining with object labels to form the noun phrase. This is followed by a consideration of T's verb morphology, including verb tense and aspect, and a report on the development of T's verb phrases, including the use of verb particles, auxiliaries, prepositions, and adverbs. Finally in this

Table 6.1. *T's use of the copula during the 20 to 25 month period*

<i>Identification</i>		
<i>It</i>	<i>That</i>	<i>This</i>
It's a tape recorder	That's Daddy over there	This is Pete
It's Maria's school	That's a paper too	
It's a triangle	That's a square	
It's the ear	That's Weezer	
It's just a blackboard	That's the kind of jelly I want	
It's the blackboard	That's him	
<i>Location</i>		
<i>It</i>	<i>Here and there</i>	<i>Others</i>
It's by Daddy's shoes	There's rocks in there	I'm on the keys
	There it is	We <u>are</u> at school
	Here is the Jello	I'll <u>be</u> right back
	There they <u>are</u>	The 7-11 is by the beer store
	There's a mouse	
<i>Attribution</i>		
<i>It</i>	<i>That</i>	<i>Others</i>
It's cold out here	Daddy, that's alright	Trangle's little
It's hard	That's too little for me	Zelda's sick
It's little	That's Mark's book	I'm sorry I coughed at you
It's my Coca Cola	That's my chair	This is my ball
It's fun to play with puzzles		
It's yellow		
It's green		
It's hot		
<i>Grammatical morphology</i>		
<i>Present progressive</i>	<i>Past perfect</i>	
Daddy's working real hard	Danny's gone	
Danny's talking a Chris	That string's stuck	
Holly's riding on Dopey		
I'm gonna get more Coca Cola		
<i>Question</i>		
<i>What</i>	<i>Other wh-</i>	<i>Others</i>
What's that under here	Where's X	How's this work
What's that car doing in there	Who is that	Is that alright, Daddy
What <u>are</u> you doing	Where is my bottle	Is that off please
What color is these	Where you <u>are</u>	
What's these, Daddy		

Note: Forms other than *is* or *'s* are underlined.

section, I report what few data there are in T's diary concerning subject-verb agreement. Because none of the sentences exemplifying the structures of this section are listed separately in the appendix – all are listed in other places, mostly with the main verbs of their sentences – I try, in the text and in several tables to convey a good sense of the data on which my generalizations are based.

6.2.1. *Noun morphology: Possessives and plurals*

As documented in section 6.1.2, T began marking her possessive sentences with intonation and soon thereafter (around 18 months) with the possessive *-s*. At 17.14 the entry reads “Mommy’s pillow” and a day later “Mommy’s shirt” (again pointing). For the next 8 days there is a mixture of examples with and without *'s*. From 17.24, there is relatively consistent use of *'s*: Of all of her two-term possessives without verbs produced during the next 2 months, 30 used the *'s* and 7 did not, with the omissions scattered evenly throughout the period. This count excepts several expressions with the name *Travis*, for example, “Travis feather” (19.19). These are excepted because it is quite possible that the *-s* ending on the name presented morphophonemic difficulties. (See appendix for subsection 6.1.2 for a listing of the possessor–possessed sentences without verbs.)

Prior to 18 months, the status of T’s plural morpheme is questionable at best. She used some plural forms in simple naming contexts (e.g., to name “chips”), but in none of these did the plural alternate in a significant way with the singular form (e.g., she did not use the singular form “chip”). It would thus seem that for T these were simply independent lexical items that happened to end in *s*. Because I did not follow object naming systematically, however, the status of these early examples cannot be determined conclusively.

The status of the plural marker is clear, however, from around 18 months on when T began to mark the object label with *-s* in sentences with the modifier *two*, for example, “Two cats” (17.27) commenting on a picture with two cats (see appendix for section 6.1.4 for more examples of this type). From this time on inspection of object labels in sentences in the diary shows clear alternation of singular and plural forms in appropriate contexts (e.g., *cat* versus *cats*), and, expectedly, the plural occurs frequently throughout the remainder of the diary in a variety of sentence types. It is of course possible, indeed likely, that T’s earliest learning was tied to particular linguistic contexts (i.e., the use of *two*), but it was certainly not long before T clearly applied it to almost all object labels. It is important to note, however, that knowledge still does not lead to 100% performance as the numerous omissions of the plural marker on the video at 19 months indicate.

This interpretation is corroborated, at a slightly older age, in the unsystematic notes at the end of the diary in which two phenomena are noted. First are noted two examples of the overregularizations “Foots” and “Sheeps,” and second, in a game in which T counted things, she said about her face, “Two ears,” “Two eyes,” and then “Just one no” (pointing to her nose). In neither case of course did T

receive an adult model on which to base her pluralization (or depluralization), and thus we can presume that these were not learned by rote. Thus, by 2 years of age – and probably before – it is clear that T knew that the plural marker was something that could be used on any and all object labels.

6.2.2. Noun phrases: Pronouns, articles, and adjectives

T's earliest words that would be classified in adult language as pronouns were the two terms *some* and *that*, used first during the 16- to 17-month period. Both were used almost exclusively as single-word requests, *some* for food and other continuous quantities and *that* for objects. Because object naming was not followed systematically, it is not possible to discern whether these terms were substitutable for other terms T knew or whether they were terms she used when she did not know the name of an object or substance. In any case, in these early uses these terms do not provide strong evidence for the existence of a strong notion of substitutability. A similar uncertainty exists in the following month for T's use of *this* and *that* in sentence frames in which she commonly used object labels. Thus, she says "Bye-bye that," "More that," "Hammer this," and "Draw this," but again it is not clear whether these were in some sense default terms for use when she did not know the object's name (naming was not recorded) or whether they were in fact substituting for object labels for some pragmatic reasons.

The other pronoun (i.e., as classified in adult language) that played an important role in T's early language was *it*. The problem is that *it* did not seem to be a free morpheme during the early periods. Thus, during the period from 17 to 19 months T had 12 commonly used verbs (as well as some infrequently used ones) that had *it* attached to them. These typically began as single-word requests or comments such as "Get-it" or "Open-it" or "Wash-it." The evidence that these were indeed attached as a part of the verb is that T commonly (and for most of the 12 exclusively) retained the *it* even when an object label (that should have substituted for *it*) was added. Thus T says such things as "Find-it ball," "Get-it hat," "Phone get-it," "Open-it door," "Cut-it toes," "Spill-it tummy," and "Weezer lick-it arms." During the 19- to 21-month period T began dropping the *it* for many of these verbs when an object was also expressed, usually substituting the article *the* in its place. Thus, during this period, we now have "Find the stick," "Get the pencil," and "Open this cracker." Nevertheless, a variety of examples still persist at around 20 months, for example, "Made-it pizza," "Put-it on ring," "Eggs smell-it," "Like-it bread," "Wash-it hand," "Popsicle dropped-it," "Daddy take it the matches," and "Close it this door." There are seven examples

of the unnecessary *it* occurring after 20 months (four with *get*) and the very last example of any type occurs at 21.06 when T says "Eat-it all up apple."

At 20.19 a seemingly unequivocal use of *it* as a free-standing morpheme occurs. T says "Ate mine potato chip on floor" about the cat's just completed behavior. Immediately after this (and in the same discourse context) she says, "Weezer ate it all up" (and *ate* was not a verb to which *it* was typically attached). It is thus patently clear that T could have named the object if she had wanted, but, for some pragmatic reason, substituted *it* for the object label instead. The use of *it* as a freestanding pronoun was not common during the later periods of observation, T much preferring the more emphatic *this* and *that*.

It should also be noted in this context that during the 19- to 20-month period T also learned the prolocatives *here* and *there*. In many cases these words substituted for the name of an object, for example, "This ball under here," crawling under the car (for which she had a name), and "Bugs in there," as a chair was turned over (she had the name *chair* as well).

In terms of personal pronouns T was not particularly prolific. During the 17- to 20-month period she called herself "Baby" or "Travis" and used *this* in a number of sentences. There are 20 instances during this period of T referring to herself as *me* in both subject and object pronoun uses: "Me get-out," "Danny hurt me," "Me ride horsie," "Me hungry," and "Draw me man." By 23 months the difference between *I* and *me* seemed to be worked out, and T had learned several of the other personal pronouns as well. On the videotape at that time, for example, there are 34 sentences with *I* as subject pronoun (ranging from "I get it" to "Can I have a bite?"), there are 8 uses of *me* as an object pronoun (e.g., "Can you hold me?"), and there are no examples of confusion between the two. Throughout the diary and tape transcripts at this later time, T shows command of *you* and *we*; there is no evidence of her using *us*. A few examples such as "Because her hit me" (with no examples using *she*) illustrate that T had not fully mastered the third-person subject and object pronoun forms.

T began expanding the verbal material in argument slots during the 18.11- to 18.24-month period (see Table 6.2). She began by using articles in sentences such as "Get the pencil" and "Open the umbrella," and a demonstrative adjective in one sentence "Lock that Lulu." All of these were in the postverbal argument slot. During the 18.24- to 19.24-month period, T continued along this same line with the demonstrative adjective *this* in "Close this window," "Ride this Mommy," and so forth; this strategy was quite productive as there are 47 entries of this type during this

Table 6.2. *The expansion of T's noun phrases in the 18- to 25-month period*

Age	Actor (preverbal)	Object (postverbal)	Others
18.11 - 19.00	--	<i>the</i> (14) Get the pencil, Catch the ball, etc.	--
19.00 - 19.24	<i>this</i> (2) This ring mine This ball under here <i>modifier</i> (5) Two rugs down, Big rock stuck, Funny mask on me, etc.	<i>this/that</i> (47) Close this window, Ride this Mommy, Lock that Lulu, etc. <i>modifier</i> (5) See Daddy's car, Move Mommy's chair, etc.	--
19.24 - 21.00	[<i>this</i> and <i>modifier</i> expansions continue]	<i>this/that/the +modifier</i> (13) Swinging the new pajamas, Bite the banana Popsicle, etc. <i>two modifiers</i> (2) Scared of funny other man Buy other kinds balloons	<i>the</i> (10) Draw on the paper, Run in the street, etc. <i>modifiers</i> (9) Write on Daddy's chair, Have juice in my bottle, etc.
21.00 - 25.00	[All major types in all three columns continue] <u>Expanded Actor and Object Noun Phrases (1)</u> Other bird in the bush		

Note: Under dates are new structures to emerge during that period (previous structures continue). Frequencies in parentheses refer to number of entries in the entire diary.

period – more than all other three-word combinations put together. T also on two occasions expanded the actor noun phrase with *this* in the sentences “This ring mine” and “This ball under here.” T did not expand any other types of arguments (instruments, locatives, etc.) during this period.¹ During this same period T also expands both actor and object

¹ In attempting to differentiate the function of these terms, I must report that I was unable to predict at any time when she might use one or the other of the three specifiers *this*, *that*, or *the*. However, I would probably not fare much better with adults, and so we may assume that T was in the process of working out the subtleties of these function words during the course of this study. (Although there are a few sporadic examples of

noun phrases with modifiers, as in “Big rock stuck” and “Move Mommy’s chair.”

In the 19.24- to 21-month period, T expands her postverbal noun phrases even further by combining an article or demonstrative adjective with a modifier in such sentences as “Bite the banana popsicle,” “Maria made this two cats,” and “Swinging the new pajamas,” and by combining two modifiers in such sentences as “Buy other kinds balloons” and “Scared of funny other man.” Her preverbal noun phrases continued as before to have either an article/demonstrative or a modifier, but not both and not more than one of either. This more modest pattern also described all of T’s other argument noun phrases, including the newly emerging expansion of locative and instrument phrases. Only a very few times in the entire corpus does T expand more than one noun phrase in a sentence: actor and object noun phrases are modified in the otherwise unremarkable “Other bird in the bush” (there are a few others in which the object and location are both expanded with articles or demonstrative adjectives).

The most striking thing about T’s noun phrases – given her general facility with language and her large object and modifier vocabularies – was their relative lack of complexity. In addition to the “*this/that/the* + name” as a noun phrase, there were a few “modifier + name” constructions, and a few “*this/that/the* + modifier + name” constructions. This is despite the fact that she was perfectly capable of stringing together a variety of modifiers as evidenced by such verbless sentences as “Big Daddy’s tree” and “This one other funny man.” The longest noun phrases that T employed were such things as “the new pajamas” and “other kinds balloons,” and these were not all that frequent. The other obvious point is that T’s object noun phrases were expanded both more frequently and more elaborately than any of her others. This is presumably due to the fact that these were often the “comment” part of the speech act and thus the new information. It is also important that of the many prepositional phrases recorded very few were adjectival. When T says such things as “Have jelly on my toast,” there is currently no jelly on her toast and she wants some on it; “on my toast” is thus a locative designating the goal of the having as opposed to as modification of jelly (as, e.g., if an adult were to scrape some jelly onto another person’s plate and say “Have the jelly that is on my toast”). Although T produces some very long sentences by the end of the observation period, most of the length is due to optional arguments, usually specifying locative information (e.g., “Get your cigarettes out of here”), or else to the concaten-

a schwalike sound in the interstices of sentences, T did not use the article *a* consistently at any time during the study; there are only two clear entries: “Mommy make a bubble” [19.21] and “Have a doughnut for you” [21.20]).

ation of two clauses (e.g., “Take this away and put it on the table”). The one exception to this is when T fills an argument slot with an entire sentence, as in “Look at Pete eating a bone” and “I want to get in your lap” (these will be discussed more fully in section 6.3.3 on sentences with more than one verb).

6.2.3. Verb morphology: Past, present progressive, and future

Like most English-speaking children, T learned past- and present-progressive forms of many of her verbs quite early. In fact, in many cases she learned the inflected form first, and in some cases she never learned the corresponding present-tense form at all in the course of the study. The problem thus arises whether two forms that an adult would consider as two forms of the same verb root are considered that way by T. Is *stuck*, learned to designate recalcitrant objects, related in any way to *stick*, learned about poking things into things (e.g., sticking a hand in there)? In what sense is *working* a present progressive if T never once used *work*? There are other problems as well, but for now let me make clear that I am attempting to establish in the current analysis whether and at what time T actually contrasted two forms of the “same” verb. This requires at least that both forms be used during roughly the same time period and that they be used in similar conceptual situations.

T had 24 verb forms that would be classified in adult English as some form of the past tense. They are present in the earliest stages of her language and persist throughout the observation period. One problem with some of the early forms is that they are past participles used to refer to a current state of affairs. Thus in adult language we would say that something *is* “stuck” or “gone” or that I “am” “hurt” or “scared.” It is thus important to note this fact as it may be that T contrasts this form with a present-tense form, but she may conceive of it as a result of the activity, not the performance of the activity in the past. This would still be interesting grammatically, but it would not represent acquisition of a marker for the past tense.

T’s earliest past-tense form is *stuck*, which was used frequently (54 entries) from the middle of the 15th month on. It would seem clear, however, that this is not in any sense a past tense form for T. She is describing a current state of affairs – an immovable object – that is wholly perceptually present. Moreover, at this time she does not have the corresponding present-tense form as a point of contrast. It is not until 19.17 that T learns the verb *stick* to talk about sticking things (e.g., fingers) in other things (e.g., ketchup). This would seem to be a very different situation from the immovable object situation, and moreover, this is the transitive form of the verb, whereas her uses of *stuck* are all intransitive

(she never says someone stuck something somewhere). It is thus not clear that T related these two forms to one another even at this later period.

A somewhat similar situation hold for T's second past-tense form *gone* (purely a past participle in adult English). This word was also used early (from 16.18) and frequently (68 entries). It also referred to an event that was, in a sense, perceptually specified *en toto*; that is, *gone* was used by T in situations such as finishing food or finding an empty bottle or closing a book on a picture or not finding an expected object. These are all descriptions of a current state of affairs, and in fact most cases did not result from a past act of going at all. T had no present-tense form during this early period to specify the act of leaving. In the middle of the 17th month, T learned *go*, but it was used mainly in reference to things going fast. She did use this word twice (at 17.14 and 17.28) in reference to others or herself leaving (she had been told that people sometimes had to go – meaning leave), but she also used it as in “Let’s go” and as in that “goes” in there. Given the complexity of the form *go*, it is simply unclear to me whether this form contrasts with *gone*; given the small degree of overlap in their situations of use, my inclination is to say no.

During the 18- to 19-month period T produced four other forms that would in adult English be classified as some form of past tense. These are not past tenses in their earliest uses, though they may become such later. First were *got-it* and *made*, learned in the 18- to 19-month period. *Got-it* (14 examples) was first used by T in the middle of the 18th month. Its corresponding present-tense form *get-it* had been used for almost 2 months prior to this; it thus was used contrastively from the beginning. T used *got-it* to indicate that she had just obtained (actually physically grasped) an object she had been chasing or otherwise trying to get. She often used *get-it* to comment on her own activity of going after something. A particularly clear example of the contrast comes at 19.16 when she drops a ball and says “Ball gone. . . . Get-it (as she chases it). . . . Got-it (as she clutches it).” There is of course still the question of whether these two forms are actually seen by T as variants of the same root verb, but, for me, the telling point is that they clearly refer to two temporal points in the same act, which might suggest that they are related. Nevertheless, the way T uses *got-it* is, as in the case of the previously reported past-tense words, to describe a present state of affairs – what an adult would indicate by saying “I have the ball” or “I have got the ball.”

Made was used in sentences that surprised T's parents from the beginning. T had first used *make* as a single-word request in a block building game during the 16- to 17-month period. At 18.25, before she had produced any sentences with *make*, T says of two pictures just drawn “Maria made” and “Mommy made”; 4 days later, in a similar situation,

she says "Maria made this duck." During the next 2 months there are 24 examples of such expressions always with the maker and the made linguistically expressed (which was unusual at this age). During this same period, *make* began to be used in sentences as well to ask for someone to make something or to comment on her own activity of doing so; for example she says she is making dinner (pretend), she wants Mommy to make a bubble, she is making a cake out of sand, she wants Daddy to make a noise, and so forth. The problem for current purposes is that while *made* sometimes referred to a past act of making that T sometimes witnessed, it often did not. Thus, T says that her friend made a book (she had given it to T), that Mommy made a table (she had painted it), that her friend had made a shirt (upon seeing a shirt just like his on another boy), and that "Mailbox made this" about a doll that had come in the mail. She also used *made* in some instances where making had truly occurred in the past (e.g., pictures drawn). But it is important that when T referred to those activities in the present tense she did not use *make* – she used *draw* or *give* or whatever. Thus, it is unclear to me, because they are used with different activities altogether (there is not one case of overlap), whether indeed *make* and *made* are truly contrastive forms of the same verb for T.

The other pair to emerge during this period is *scared* and *hurt*, learned late in the 18th month to describe current states of affairs. *Scared* (14 entries) was used mostly as a description of T's current state, although there is 1 entry about her reporting on a past event. She used a contrasting present-tense form for the first time at 21.10 – "Maria scares me up high." T's earliest uses of *hurt* also described her current state in most cases. Near the 20th month, however, she uses this same term to refer to events that happened days or minutes before: "Pete hurt a car" about the dog's being hit by a car and "Danny hurt me" after he had. The only present-tense uses occur at 21.00 when, as Mommy prepares to put lotion on her, she says "That baby lotion hurts me" and on the audiotape at 23 months when she says "It hurts." The safest conclusion from all of this is that T did not differentiate present and past tenses for *scared* and *hurt* at least until 21 months when she used the third-person singular *-s*. But even at this time, the past-tense forms did not consistently refer to a past event.

During the period from 19 to 23 months, T began using 18 other past-tense forms. Two of these learned at around 20 months were *spilled* and *dropped*. Interestingly, these semantically very similar words show somewhat different patterns with regard to the past tense. *Drop* is learned at around 19 months and is used reasonably frequently during the following month to indicate that she has just dropped something. On the video and audio tapes at 19.26, there are 3 examples of the past-tense

form, *dropped*, all for cases in which she or someone just dropped something; there is one example of T saying “Drop it” in the same situation. In subsequent weeks T continues to use both forms in the same situation, however, there is an example where she asks to be allowed to drop (herself) down onto something. In contrast to this pattern, *spilled* was learned – at 19.22 when *drop* was being used in its present-tense form only – first as a past tense. T’s first use was “Spilled it a chin.” Her next five uses are in the present-tense form, even several cases in which the event happened a good while previously. From 19.25 she uses both forms to comment on an act that she or someone else has just carried out – all cases that would require a past-tense form in adult English. In all, it is difficult to decide for these two words whether their past-tense forms truly alternate with their present-tense forms; for both of these words the two forms are used in indistinguishable ways (with the one exception of T asking to “Drop down”).

Two other past-tense forms learned during this same period are *broke(n)* and *came-off*. T’s earliest uses (four examples during the 19- to 20-month period) were of the form “X broken” or “Broken X” – a description of a current state of affairs. At 19.30 there is one example of “Broke a light” as T points to a broken kitchen light, and this would clearly seem to be a reference to a past event. T was also using *break* at this time both to request and to comment on acts of breaking, and so I conclude that at this point T had a true past-tense form for this word. *Came-off* is used a bit later (21 months) and is used to refer to things (e.g., a string) that were once attached to other things (e.g., a toy). She does not have a present-tense form of *come-off*, although she does have several other variants of *come*. This term is thus not clearly contrastive, and, in any case, it is unlikely that what T intends to indicate by this expression is a past act of coming off.

Two other interesting forms are *gave* and *ate*. From around the middle of her 19th month T had used *give* or *give-it* to request that people give her objects in their possession. At 21.05 T announced that “Aunt Lulu gave me boots.” A month later, and all within a period of a few days, T produced six other sentences of this same form (and one more a month later). Like *made* before it, the actual connection to the precise type of past event is a bit nebulous, but in this case it was true in all instances that a past event of giving had indeed taken place. (It is interesting to note in this regard that *made* is no longer used at this period.) Thus, although *give* is not a frequent form, nevertheless *gave* would seem to fulfill all of the criteria for a past-tense form: It alternates with its present-tense form and refers to the same type event having occurred in the past. T’s word *ate* had a very circumscribed use: On four occasions in a 2-week period (around 20.10) she said that the cat ate something. In

one case the cat was currently engaged in the activity, and in the other three she was referring to a just completed event. Because T was using *eat* at this same time for the act of eating in very similar circumstances (once even with the cat at around the same time), I conclude that this word was indeed a past-tense form of the verb *eat* for T.

Of the remaining 12 past-tense forms, 8 are cases in which there are only single examples (in one case 2) of past-tense forms of verbs that occur earlier and with high frequency in their present-tense forms. The first of these was *closed*. T began with the present-tense form *close* and used it for more than a month prior to her one use of *closed*. Her one use was “Butt closed” when she does not want her temperature taken – clearly a description of a current state of affairs. On two occasions, T announced that “Weezer did it” (19.11) and “I did it” (23.00). Because the single-word request *do-it* was only used in one sentence during this time, the status of *did* (which in any case seems to be serving to identify an actor rather than refer to a past event) is unclear (there seems to be no overlap of events).

There are also only single examples of the forms *drew*, *pushed*, *had*, *played*, *found*, and *fell*, and again, the present-tense form of the word was a very frequently used word for T. *Drew* was used to refer to a past event of drawing at 21.10, as were the examples of *pushed* at 20.27 and *had* at 21.09. The single examples of *played*, *found*, and *fell* are all about just completed events at around 23.00. Although these single examples are meager data from which to draw firm conclusions, these forms all fulfill the criterion of reference to past events of the same type as those referred to by the present-tense form and the criterion of contrastive use (in a temporal sense) with the corresponding present-tense form.

Of the four remaining past-tense forms learned during the 19- to 23-month period, two had very weak present-tense forms and two had no present-tense forms at all. There is only one example each of sentences with *called* and *said*, and neither of these has a corresponding present-tense form. *Finished* was used quite frequently as a single-word announcement (and also in one sentence). There is only one example of the present-tense form, when she says on 20.13 “Finish Doo-dads” as a request that she be allowed to. This is clearly an event for which she might announce “Finished” when she did, so I conclude that they are about the same type of event. *Told* is used reasonably frequently, but again there is one use of the present-tense *tell* – and this is not until 23 months. One thing that is clear is that *told* does indeed refer to a past event. In all of her uses, T is reporting about what someone had said to her previously (usually about an object of current interest).

Table 6.3 summarizes the development of T’s past-tense forms. For each form the table specifies when the form contrasted with its present-

Table 6.3. *T's use of past-tense verb forms during the 15- to 23-month period*

Verb	First use	Frequency	Learn relative to present tense	First contrast	Same situation?	Past?
Stuck	15.18	54	?	?	No	No
Gone	16.18	68	?	?	No	No
Got	18.13	14	After	18.13	Yes	No
Made	18.29	25	After	18.29	No	Yes?
Hurt	18.25	24	Before	21.00	Yes	No
Scared	18.25	8	Before	21.10	Yes	No
Spilled	19.22	5	Before?	19.23?	Yes	Yes?
Dropped	19.26	7	After	19.26?	Yes	Yes?
Broke(n)	19.03	6	After	19.30	Yes	Yes?
Came-off	21.06	4	-	-	-	No
Gave	21.05	8	After	21.05	Yes	Yes
Ate	20.11	4	After	20.11	Yes	Yes?
Closed	20.11	1	After	20.11	Yes	No
Did	19.11	2	After	21.10	No	Yes
Drew	21.10	1	After	21.10	Yes	Yes
Pushed	20.27	1	After	20.27	Yes	Yes
Found	23.00	1	After	23.00	Yes	Yes
Fell	23.00	1	After	23.00	Yes	Yes
Had	21.09	1	After	21.09	Yes	Yes
Played	23.00	1	After	23.00	Yes?	Yes
Called	19.26	1	-	-	-	Yes
Said	23.00	1	-	-	-	Yes
Finished	20.03	2	Before	20.13	Yes	No?
Told	19.26	7	Before	23.00	Yes	Yes

Note: The order of verbs in the table reflects the order they are discussed in the text. The last two columns reflect judgments at the time of first contrast.

tense form, my best judgment as to whether it refers to the same type of event, and whether it refers to an event in the past (rather than a current state of affairs at the time of contrast). The words that clearly fulfill all these criteria are *ate*, *drew*, *pushed*, *had*, *fell*, *gave*, *played*, *found*, and *told*. These all come into being between the middle of the 20- to 21-month period and 23 months. Prior to that time, T may have formed some type of contrast between forms such as *gone*, *made*, *hurt*, *scared*, and *broken* and their corresponding present-tense forms, but it is likely that

the reference was not to a past activity, but rather to a current state of affairs that resulted from some particular type of past activity. The pattern of learning would thus seem to be compatible with the hypothesis that T learned her past-tense forms as individual items, on a verb-by-verb basis, and only in some cases contrasted these with their present-tense forms.

During this same overall time frame, T also learns and uses 23 verbs in their present-progressive forms. The difficulty with determining the status of this verb form is that it is not clear in many cases how one distinguished, from an observer's point of view, the two conceptual situations indicated by the present and the present-progressive aspects of verb forms. The child may legitimately comment on her own activity with either "Sweep" or "Sweeping." On the other hand, in most cases the child should not use the progressive form to request an activity, for example, she should not say "Driving" as a request for the activity, but rather "Drive." But this is clearly not a stringent criterion – the child might be requesting to "go driving." Therefore, although I try to be generally critical in examining particular cases, I do not delve too deeply into nuances of use but simply determine when T contrasts present and present-progressive forms of the "same" verb.

At around 17 months T uses her first two words ending in *-ing*: *crying* and *sweeping*. *Crying* was learned to describe either the noise of a baby crying or, more frequently, a picture of a crying face. It was used on four occasions spaced out during the 17- to 20-month period. At 24 months T produced her only present-tense form of this verb in the sentence "Cry about you," reporting on her past behavior, thus establishing the first contrast. The other very early use of an *-ing* word was T's comment on her own activity of "Sweeping." This comment is recorded on the video at 16.25 and is her only *-ing* use during the observation period. One month later, on the video at 17.26, in exactly the same situation she says "Sweep." There is only one later use of *sweep*. It is unclear that one use of each form (in exactly the same situation) constitutes a good case for contrast.

There are no new *-ing* forms during T's 18th month. During her 19th month, however, a veritable explosion took place in these words (noted at the time in the diary) as T learns 15 of them. Six of these – *singing*, *clapping*, *sleeping*, *screaming*, *working*, and *walking* – were used only in this form with no examples of their present-tense forms occurring at any point in the observation period. All designated ongoing activities, as the present progressive is supposed to, but because none contrasted with a simple present tense, their status in designating this aspect of events is indeterminate. Six other words learned at this time were used before their present-tense counterparts were learned. The case for true contrast

is very weak in the case of *driving* and *cooking*. T used *driving* not only as a comment on her own activity but also as a request for the activity. T used *cooking* to comment on her own activity exclusively, but the one and only example of the present-tense form is the enigmatic "Step cook dinner" as she steps on the top to a pot – not a true present-tense use, I believe. The other 4 forms of this type alternate with their present-tense forms at various periods. The present-tense form for the previously learned *washing* is learned at 19.30, and for *swinging* it is learned at 19.21. *Drinking* is used on a number of occasions for over a month, and then T begins to use *drink* at 20.19. *Talking* is learned first and then at 23 months T uses the present-tense form *talk*. Finally, 3 words of this group were learned after their corresponding present-tense forms. *Swimming* begins alternation with the present tense at 19.08, *drawing* at 19.27, and *coming* at 24 months.

The final eight present-progressive forms were all first used after 20 months of age, and all but one of them were cases in which T used the present-progressive form of a long and well-established present-tense form. *Eating*, *putting*, *falling*, *licking*, *reading*, *doing*, and *playing* all had present-tense forms that had previously been used quite frequently – and for an average of 6 to 8 weeks prior to the use of the present-progressive form. The one exception is *standing*, which emerged at the same time as *stand* at 23 months. Table 6.4 summarizes the development of the present-progressive aspect. Although it is difficult to tell about productivity in this case, around 19 to 20 months would seem to be the earliest solid cases in which T has both present progressive and a present tense of the same verb, and this is only for a few verbs.

To illustrate the grammatical status of T's verb morphology, we can compare briefly the past-tense and present-progressive structures. The first thing to note is that there are only four verbs that use both endings (five if *came-off* and *coming* are considered as derivative of the same verb *come*). These are *fall*, *draw*, *do*, and *eat*. *Fall* has one instance of a past tense and two present progressives; *draw* has one of each; *do* has two past tenses and one present progressive; and *eat* has one present progressive and four past-tense examples (all from very similar contexts). The implications of these developmental patterns of acquisition would seem to be that T has not learned a completely flexible and generalizable system of verb morphology, but rather that she is working on each verb in each form in its own separate way (cf. Bloom, Lifter, & Hafitz, 1980).

It is also interesting to compare the acquisition of past- and present-progressive forms as a function of verb type (see Table 6.5). Of the 76 change of state words 15 have past-tense forms and only 4 have present-progressive forms. Of the 86 activity words, only 9 have past-tense forms while 20 have present progressives. Also of interest is the asymmetry

Table 6.4. *T's use of present progressive during the 16- to 23-month period*

Verb	First use	Frequency	Learn relative to present tense	First contrast
Crying	17.00	4	Before	24.00
Sweeping	16.25	1	Before	17.26?
Singing	19.04	4	-	-
Clapping	19.14	1	-	-
Sleeping	19.18	7	-	-
Screaming	19.21	2	-	-
Working	19.15	2	-	-
Walking	19.23	2	-	-
Driving	19.00	1	Before	19.07
Cooking	19.26	3	Before	20.13
Washing	19.24	1	Before	19.30
Swinging	19.10	3	Before	19.21
Drinking	19.09	6	Before	20.19
Talking	19.26	3	Before	25.00
Swimming	19.08	3	After	19.08
Drawing	19.27	1	After	19.27
Coming	19.26	3	After	19.26
Eating	20.10	1	After	20.10
Putting	20.19	1	After	20.19
Falling	20.29	2	After	20.29
Licking	21.15	1	After	21.15
Reading	23.00	1	After	23.00
Playing	21.06	1	After	21.06
Doing	23.00	3	After	23.00
Standing	23.00	1	Before	23.00

Note: The order of verbs in the table reflects the order they are discussed in the text.

between the 2 types of verbs with regard to when the 2 inflected forms were acquired relative to present-tense forms. With regard to the present progressive, all 4 change of state progressives were learned well after their present-tense forms, while 70% of the activity progressives were learned first. Past-tense forms, on the other hand, were learned equally often before and after present-tense forms for activity verbs, but much more often after present-tense forms for change of state verbs (73%). Presumably, the reason for these asymmetries lies in the pragmatics of

Table 6.5. *Past and present progressive as a function of verb type and order of learning*

	Past	Present progressive	
<i>Inflected form learned before present tense form (or form is non-contrastive)</i>			
Change of state	Stuck Gone Finished Spilled		
Activity	Hurt Scared Called Told Said	Clapping Sleeping Screaming Walking Working Talking Singing	Sweeping Crying Swinging Drinking Driving Washing Cooking
<i>Inflected form learned after present tense</i>			
Change of state	Got Made Did Gave Closed Dropped	Had Came-off Fell Broke(n) Found	Coming Doing Putting Falling
Activity	Ate Played Pushed Drew	Swimming Eating Playing	Licking Drawing Reading

these word forms. A salient dimension of activities is their actual performance and often the child is drawn simply to comment that one is ongoing. While this occurs on some occasions with changes of state, more salient would seem to be the resulting state.

One final aspect of T's verb morphology is her infrequent use of references to the future. Only three occur before the tapes at 23 months, and all involve *will*. All three examples occur on 21.01. They are: "I will turn on TV Captain Book," about a television show, "I will do that" about a move on the monkey bars, and "I never will spilled it" after being warned not to spill her drink (presumably she means she "will not" spill it). As in the case of the copula, the fact that seven examples

appear on the 23-month tapes suggest that the recording of the future in the diary was not careful in the weeks preceding these tapings (although I was quite excited about the uses at 21.01 and would be surprised if I wasn't careful for at least the next month). On the video and audio at 23 months, T says such things as: "I'll be right back," "I'll drink all of that," "I'm gonna get more coca-cola," "Won't spill it anymore," "I won't swallow it anymore," "I'm not going to swallow it anymore," and "You gonna wipe that off?"

Overall, there is clearly not enough data to draw firm conclusions about T's use of the future, but the primary functional contexts in which T used the future were the announcing of an action she was about to perform (five instances) or not perform (four instances); the other is a question asking whether someone else is going to perform an action. With regard to form, T uses the future markers *will* and *'ll* in five sentences, *won't* in two sentences, and *going to* or *gonna* in three sentences. Of the eight different verbs used in these sentences, two were also used in the past (*spill*, *get*), one was used in the present progressive (*drink*), and one was used in both (*do*).

6.2.4. Verb Phrases: Particles, prepositions, auxiliaries, and adverbs

The verb phrase does not, I believe, form as coherent a unit as the noun phrase, whether in adult or child language. It is true that for many verbs we can test for the verb phrase by various substitutions, for example, "John hit your sister" could be "John acted." But there are other verbs for which substitution is difficult (e.g., "John hurt his leg" or "John deserved a better fate"), and in any case the words used for the substitution (e.g., *acted*) are not proforms actively used in discourse the way the pronouns *it*, *this*, and *that* are, for example. Whatever is the case for adults, I am convinced by Bowerman's (1973) analysis that the verb phrase is not a coherent psychological or grammatical unit for the young child. In this section, therefore, I simply discuss a set of grammatical phenomena related to the verb: verb particles, prepositions, auxiliaries, and adverbs.

T's words that would be classified in adult language as prepositions or verb particles form a diverse group. The development of the spatial oppositions *up-down*, *on-off*, and *in-out* were described in section 4.4 under location of objects because they were mostly used as holophrases early in development (17–19 months) in verblike ways to request or comment on changes of location. All of these gradually came to serve the function of completing or complementing a verb (i.e., as a particle), and all were eventually used in prepositional phrases. The words *over*, *under*, *with* (instrumental), *by*, *for*, *to*, *at*, and *of* were used as prepositions

from the beginning (20–24 months) and served to mark various object labels' relationships either to the verb of the sentence or to each other.

The distinction between verb particles and prepositions is a problematic one in adult language, and, as usual, that means that it is even more problematic in early child language. The basic idea is supposed to be that prepositions merely add to the notion expressed by the verb, whereas verb particles change it into a new verb. This is sometimes very clear, as in "I will drop off your book" or "He will make out fine." For both of these a unique verb seems to have been formed (different from the verbs *drop* and *make* by themselves) and there is no prepositional phrase following *off* or *out*. But in many other cases it is difficult to decide. In any case, in the current analysis, I use such considerations sparingly and instead focus on T's pattern of use as the primary clue. Thus, I will report as verb particles the uses of *up-down*, *in-out*, and *on-off* that were used first in juxtaposition to the verb and later separated from it. For example, T first said such things as "Get out kisses" and then later "Get *me* out." The other criterion is that the verb and particle could be used in a sentence ending with the particle, for example, "Get me out" or "Put that down." Because there is no phrase following the particle, this presumably increases our confidence that it is not being used as a preposition.

Table 6.6 lists all the uses of *up-down*, *in-out*, and *on-off* that fit this developmental profile, along with a few that do not fit it exactly but are similar in a number of other ways. There are three basic developmental patterns. The first is represented by those verb-particle constructions that were always used as a unit: *Come on*, *come in*, *came out*, *came off*, *get down*, *falling out*, *falling down*, and *broken off*. Note that for the most part these are used as a unit in adult language. The second pattern involves those verb-particle constructions that began as a unit (perhaps adding an actor or object in a pivotlike way) but ended up as split (with the object between them): *get out*, *get off*, *put in*, *put on*, *turn on*, *eat up*, *ate up*, *lick up*, and *push down*. Thus, T begins by saying "Get out kisses" and ends by saying "Get me out there." The third pattern is those verb-particle constructions in which the verb and particle were split from the beginning: *get* _____ *up*, *take* _____ *out*, *take* _____ *off*, *put* _____ *up*, *put* _____ *down*, *put* _____ *off*, *turn* _____ *off*, *lick* _____ *off*, *drink* _____ *up*, *drink* _____ *down*, *wipe* _____ *off*, *cover* _____ *up*, *pick* _____ *up*, and *pull* _____ *up*. Because they were never used as a unit, this third group produces many sentences that are especially difficult to distinguish from prepositions, for example, "Put it up there by the window." The interesting fact is that, while most of the verb-particle constructions from this third group had some sentences like this, almost all of them had some sentences ending in the particle (with no following

Table 6.6. *The development of T's verb-particle constructions during the 19- to 23-month period*

	Pre-19	19 - 20	20 - 21	Post-21
<i>Change of state verbs</i>				
Get	Get-out __ get-out Get-out __	Get-down Get-off __	Get-down __ Get-out __ Get __ off Get __ off there Get __ up there	Get __ out there Get __ out __
Come	Come-on	Come-in __ come-in		Come-on in __ Came-out __ Came-off __ __ came-off __
Put		Put-it in Put-it on __ Put it in there	Put __ on there Putting __ in there Put on __	Put __ in __ Put __ up Put __ up there Put __ off Put __ on __ Put __ on __ put __ in __ Put __ down Put in __
Take			Take __ off Take __ out __	Take __ off __ Take __ out
Turn				Turn on __ Turn __ on Turn __ off __ broken off
Broken				
Leave alone			Leave __ alone __ leave __ alone	
<i>Activity verbs</i>				
Eat			Eat-it all up __ Eat __ all up Eat __ up __ eat __ up	
Push			Push down __ Push __ down	
Lick			__ lick up __ __ lick __ up	Lick __ off
Ate			__ ate it all up __ ate __ all up Ate __ up	
Drink			Drink __ up	Drink __ down
Wipe			Wipe __ off	Wipe __ off __ __ wipe __ off
Cover			Cover __ up	Cover up
Fall			__ falling-out __	__ falling down
Pick				Pick __ up
Pull				Pull __ up
Clean				__ clean __ up

prepositional phrase), for example, "Put that up," "Put my toothbrush down," and "Wipe this shirt off." This adds confidence that these were indeed being used, in some sense, to complete the verb.

There is one other interesting and telling verb-particle construction that did not use one of the six designated particles. One of T's very earliest uses of split verb-particle constructions were with *leave-alone*. At 20.27 she says "Leave Stu's beer alone" and in the subsequent weeks produces nine such sentences with a variety of patients (e.g., "Leave my tummy alone") and even two sentences with agents (e.g., "Nanna leave Weezer alone"). I do not have detailed records of T's parents' use of this construction, and I am unable to see any preparations for this use in any of her previous language. I can only infer that it was learned whole cloth, perhaps with some analogical help from her earliest split verb-particle uses that were built up more gradually (the first are in the 3 weeks preceding in the form of "Put _____ on," "Take _____ off," "Wipe _____ off," and "Get _____ off"). In any case, this is T's only other productive verb-particle construction. Although it is possible, perhaps even likely, that T did analogize among her different verb-particle constructions, it is still quite clear from the data that each of T's structures had to some extent its own unique development history.

One other interesting pattern to note about T's use of verb particles is the difference between those used with change of state verbs and those used with activity verbs. For change of state verbs, there were 36 sentence patterns using either *on*, *off*, *in*, or *out*; there were 5 using *up* and *down* (all with *put* and *get*). In all of these the particle retains its major spatial function. For activity verbs, there were 18 sentence patterns using *up* or *down*; there were 5 with *on*, *off*, *in*, and *out* (3 of these are due to *wipe*, which probably has become something of a change of state word by the time of the relevant sentences). In several prominent cases, the verb particle retained little of its spatial meaning, for example, *eat-up*, *lick-up*, *drink-up*, *drink-down*, and *cover-up*. Of course all of these patterns accord with adult usage for each individual verb, but nonetheless this somewhat indirect confirmation of the two major verb classes is interesting.

I would not want to argue that there is a vast gulf between verb particles and prepositions. Every one of the particles used in verb-particle constructions (with the exception of *alone* in *leave-alone*) was used by T in prepositional phrases during this same period in sentences with other verbs. It is just that when she uses them with these particular verbs, the preposition somehow becomes more closely associated with it. In any case, in addition to these six prepositions (*up-down*, *in-out*, and *on-off*), T had a number of other prepositions that were never used in verblike ways or in verb-particle constructions as defined here. These were *with* (instrumental), *to*, *of*, *at*, *by*, and *for*. Many of the sentences containing

these have previously been reported in sections containing the main verb of the sentence. Nevertheless, Table 6.7 lists all of T's uses of these words.

Tomasello (1987) analyzed the use of these prepositions extensively. In brief, I found that, as opposed to the spatial oppositions *up-down*, *in-out*, and *on-off*, which were learned early (17–19 months) as holophrastic verblike requests for activities prior to their prepositional usage, these other prepositions were learned later (20–22 months) and used in sentences from the beginning. This was most likely done to the way these words were modeled for T by her parents. The spatial oppositions were often modeled in sentences such as “Do you want off/up/down,” that is, in the sentence-final position with stress (and usually asking about or requesting an activity), whereas these other prepositions were modeled for the most part in the interstices of sentences without stress (about states), for example “That’s a piece of cloth” or “Maria is at Dana’s house.” T omitted these prepositions from obligatory contexts more often than the spatial oppositions, and this was again attributed to the fact that they were modeled in less salient sentence contexts, and to the fact that some of these had multiple uses and therefore T may have been confused about their proper use. Finally, I found that T misused several of the prepositions of this latter type – much more often than misuses of the spatial oppositions. It turns out, expectedly, that the prepositions T confuses are the ones expressing very similar case roles, for example, she confuses *for* with *to* in sentences such as “Santa Claus gave it for me” and *with* with *by* in sentences such as “Crack pecan by teeth.”

T's use of auxiliaries was minimal in the period under study. In the final months of the study (21–24 months), she used several lexical forms that would be classified in adult language as verb auxiliaries. These occurred exclusively in the contexts of futures, negatives, and questions. Because these three usages are reported on elsewhere, a brief summary is sufficient here. T's first sentences with auxiliaries concern the future-tense marker *will* (listed in section 6.4.1 under verb morphology – future), for example, “I will do that” (21.01). Later she has a few sentences with *gonna*, as in “You gonna wipe that off?” (video at 23 months). At 22 to 23 months T produces several sentences with *can't*, *don't*, and *won't* (listed in section 6.3.1 under negatives), for example, “I can't see” and “I don't remember.” T has one example of using *can* to ask a question at 21 months (“Can I play with that too?”), and several more at 23 months (all listed in section 6.3.2 under questions). At 23 months she also produces several examples of questions with *do* or *does* (e.g., Do I get coca-cola?), once in contracted form (“How's this work?”). There is one example of a question with *could*: “Could I get knife?” The only other

Table 6.7. *The development of T's prepositions other than spatial oppositions in the 18- to 24-month period*

	Pre-22	Post-22
With	Cars with me Play with me P go with me gargage-man Play with blocks Daddy help me with this Come sit with me Can I play with that too With my shoes	With my hands P come with me in the grocery store Cut it with the knife Clouds coming with me D&k come with me in the airplane I want to draw with Stu's pen I love to play with puzzles
To	Talk to Beta Daddy take to Maria's Listen to my record	Next to heater Danny's talking to Chris Go to the new playground? Standing to the heater Go to ___ (3 examples) Don't say that to me I throw it to you I go outside talk to Maria
At	Look at ___ (6 examples) Look at girl drinking K-a Get grapes at Big Star Look at Pete eating a bone	Lemon at store Look at me in there I want to take one at a time Linda at home Play at the playground We are at school I'm sorry I coughed at you At home
Of	Piece-of ice More piece-of ice Piece-of bread Piece-of ice down here table Scared-of the funny these Eat piece-of ice all up Scared-of funny other man Piece-of ice in there Get me out of my bed	Take these p-towels out of cabinet I'll drink all of that That's the kind of jelly I want You get your cigarettes out of here Get out of that cup There lots of things
By		Put it up there by the window Hurt by ___ (3 examples) Take it off by myself *Crack pecan by teeth Draw it by Santa Claus By the telephone *Can I pick it up by my hands? Get it by myself *Cover me up by my silk Put the 9 by the letter M Go by there It's by Daddy's shoes The 7-11 is by the beer store Let me stand here right by you

Table 6.7 (cont.)

Pre-22	Post-22
For	Got for you Maria Have a doughnut for you * __ gave __ for __ (7 examples) *Crack this for my teeth Get that paper for me *Roll it back for me Bring that for Daddy That's too little for me Buttons for the light Draw some hands for the man

Note: To save space, some nouns are indicated by their first initials only. An asterisk indicates non-adult-like usage.

examples come from the *why*-questions from 27 to 29 months, which use the auxiliary *do* and its variants on a number of occasions, for example, "Why don't they have blue ice cream?" "Why did you wash your hair?" "Why does Paul have work to do?" and "Why do they have stars out there?"

Although a number of T's early words might be classified in adult language as adverbs (e.g., *too*, *back*), T did not use any of her words in truly adverbial functions (modifying verbs or adjectives) before 20 months of age. As with prepositions, T makes classification difficult in some cases because she uses some words in other functions and then gradually shifts to adverbial functions. Thus, her requests *too* and *back* were used in verblike ways, but as soon as she uses verbs with these they become adverbs. Thus, at 19.10, T begins with "Come in too" and at 20.24 she says "Come back her popcorn" (sentences with both of these words are listed in other places, *too* in section 4.2.3 and *back* in section 4.3.3). Another problematic case is T's use of *right*. The only words it is used with are *here* and *there*, as in "Poker right here" (19.18) and "Snap back right there" (21.09). *Here* and *there* are often used without *right*, so it does serve some function; I would say intuitively that it served as an emphazier, but the descriptions of context are not sufficient to draw conclusions confidently. T's use of *all* sometimes seems adverbial as in sentences such as "Eat _____ all up" and "All over _____," but these are the only frames in which she uses these (except one use in "I'll drink all of that"). There is one example of the adverb *already*; on the audio at 23 months T says "You already played that record."

T's uses of *now*, *first*, *real*, *like*, and *anymore* were much more solid.

Table 6.8. *T's use of adverbs in the 20- to 23-month period*

Too

See listings under section 4.2.3

Back

See listings under section 4.3.3

*Right*See listings under section 4.4.6 (only used with *here* and *there*)*Now*

20.00 Open this one now	20.04 Open this one now
20.01 Watch TV now	20.06 Bring jelly now
20.02 Man over now	20.08 Hold this wallet now
20.03 Lady over now	20.16 Play basketball now
20.03 Push down horse now	21.08 Buy popsicle now, after that

First

20.01 First move this
22.04 Take more first

Like

20.01 Peanut-butter sandwich like Linda	20.18 Danny made this like this
20.09 Weezer ate balony like me	21.08 No! Not like that
20.12 Look around Daddy, like Mommy	21.27 Like me, drinking my bottle
20.15 Draw like Maria	

Real

20.15 Daddy working real hard	20.19 Pete jump real good
20.15 Pull the wagon real hard	20.22 Real hard draw
20.16 Hug Fred real good	20.27 Dana push me real high in a bagswing
20.18 Maria made this real good	20.29 Run real fast steps
20.18 Daddy hit me real hard	

Anymore

23.00 Won't spill it anymore
23.00 I won't swallow it anymore
23.00 I'm not going to swallow it anymore
23.00 Can't swallow it anymore

*All, already, and all right*A few examples each

These began at around 20 months and include sentences such as “Open this one now,” “First move this,” “Peanut butter sandwich like Linda,” “Daddy working real hard,” and “I won’t swallow it anymore.” These are listed in Table 6.8. Each of these words seems to have its own context of use, and generalizations do not readily appear. *Now*, *first*, and *anymore* indicate various temporal parameters (i.e., now, the relation between two actions, and future, respectively); *like* is a comparison that T uses with a variety of comparators (“like this,” “like that,” and “like _____” (people

including “me”); and *real* is T’s only word for modifying adjectives (in the beginning exclusively *good* and *hard*).

6.2.5. Agreement

For the most part, T did not make many attempts to have subject and predicate agree in person and number until the very end of the study. There are two sentences using the third-person singular *-s* before 23 months: “That baby lotion hurts me” (21.00) and “Maria scares me up high” (21.10). On the 23-month videotape she also says, “It hurts,” “It makes a funny noise,” and “It gets heavy.” The only other use of the third-person singular *-s* in the diary is the late-occurring “She has snakes in her neck” (25.00). The only other evidence of agreement before 2 years of age comes with T’s conjugation of the copula and the auxiliary *do* (in questions) to agree with the subject of the sentence (see section 6.1.5 on the copula). Thus, while T was using *is* (also in its contracted form) from around 20 months, she only began using other forms at 23 months (video), for example, “What are you doing?” “We are at school,” and “I’m on the keys.” On that same tape, however, she asks “What color is these?” “What’s these?” and “Where’s the keys,” thus demonstrating that she has clearly not mastered copula agreement. On the tapes at 23 months T produces both “Do I get coca-cola?” and “Does it go?” indicating a sensitivity to number; however, the conjugation of *do* provides continuing difficulties in the late-occurring *why*-questions (see section 6.3.2 on questions).

6.3. Complex sentences

The three types of complex sentences T produced during her second year of life are sentence-negation, questions, and sentences with more than one verb.

6.3.1. Sentence negation

Negation in language is a complex phenomenon having both semantic and syntactic dimensions. A thorough analysis of T’s negation in the semantic sense is beyond the scope of this brief analysis, but Table 6.9 outlines the forms T used for this purpose. Reference to the appendix for each of the negative lexical forms provides the individual utterances involved. (The appendix for the current section lists all the sentences that have been syntactically negated – listed in Table 6.9 as “Sentences with *don’t/not/won’t/can’t*”) The categories used in Table 6.9 are a modification of those of Choi (1988). In general, T had forms from all of Choi’s Phase 1 categories of non-existence, prohibition–rejection, and

Table 6.9. *The development of T's negation, 15- to 24-months*

	15-18 Months	18-20 Months	20-24 Months
<i>Non-existence</i>	Where's __ Bye Gone No	All-gone Off	Finished Over Go-away
<i>Rejection - Prohibition</i>	No	Stop-it Self	Let-go Leave-alone Hush Wait Sentences with <i>don't</i>
<i>Denial</i>	No		Sentences with <i>not</i> , <i>won't</i> , <i>don't</i>
<i>Inability- Ignorance</i>			Sentences with <i>can't</i> , <i>don't</i>

Note: Categories adapted from Choi, 1988.

failure. She also had some from denial, inability, and epistemic negation, which are Phase 2 categories. There were a few sentences late in the diary that fell into the Phase 3 categories of normative–inferential negation.

Syntactically, T formed only a few complex negative sentences (listed in appendix for this section), and almost all of these were at 23 months or later. (This does not include cases in which T said “No!” followed by a sentence because these are in essence two sentences, not one negated sentence.) Some of these are sentences using *not*, for example, “No! Not like that,” “Not fall-down playground,” and “I’m not going to swallow it anymore.” There are also a number of sentences with *don't*, for example, “I don’t want it,” “I don’t know what I ate,” and “Don’t say that to me.” There are three sentences with *can't*, “I can’t see,” “He can’t get me,” and “Can’t swallow it anymore,” and two with *won't*, “Won’t spill it anymore” and “I won’t swallow it anymore.”

6.3.2. Questions

T’s earliest questions were *where*-questions and the question “What’s that?” both of which were used during the earliest phases of the study

and continued through its duration (see section 4.1.1 for discussion of *where*). There are a few isolated entries in the diary in which T asked permission by using an affirmative sentence with a questioning intonation (e.g., “Bottle coming too?”). All other questions during the course of the study are listed in the appendix for this section. In addition, I took notes on two other later developments in T’s questioning behavior: her first tag-questions at around 25 months (limited notes) and her first *why* questions during the 27- 28-months period. These are listed in the appendix as well.

At around 23 months T began using complex questions. There are five recorded examples in the diary from this time all beginning with *what* – for example, “What’s that doing in there?” and “What happened to the book?” On the videotape at 23 months, T evidences a wider variety of questions (perhaps indicating poor diary sampling in the weeks prior). There are a number of *wh*-questions, including several *who*-questions (e.g., “Who’s down there?”), several *what*-questions (e.g., “What are you doing?”), and one *how*-question (“How’s this work?”). There are also some *can*- and *is*-questions, for example, “Can I have more coca-cola?” and “Is that off please?” There are also several examples of the form “You want some too?” and “You gonna wipe that off?” Table 6.10 provides an organized listing. The notes on tag questions in the 25- to 26-month period are general observations and not diary entries of individual utterances (the formal diary had been completed at this time). Nevertheless, the four entries are the generic: “I like _____. Do you?” “This one is _____. Is it?” “These are _____. Is them?” and “This is my _____. Is it?” Other developments during this period were not recorded.

At around 27 months, T began using *why*-questions, and we decided to record them. Although the contextual notes are often poor or absent, I am confident that most of her *why*-questions during the succeeding month were recorded faithfully (see appendix for the list). There are 58 *why*-questions and a few other stray questions concerning causality that were also recorded (mostly of the form “What is _____ for?”). Thirty of the questions used the auxiliary *to be* (all but one in present tense), and 28 used the auxiliary *to do* (mostly in the past tense). As can be seen in Table 6.11, T had a much easier time with *to be*. She seems to have had control of the forms “Why is it [adjective]?” and “Why is it [participle]?” throughout (with a few ordering problems in the middle week). The only two places in which she omits the obligatory *is* occur in sentences that are more complex, namely, “Why his foot standing right there in the flowers?” and “Why his foot standing in the tree?” However, at this same time she asks correctly “Why’s that boy spinning around up there?” which would

Table 6.10. *T's complex questions, all at around 23 months*

<i>What</i>	<i>Other wh-</i>
What's that doing in there?	Who is that?
What's that car doing in there?	Who's that?
What happened?	Who's down there?
What happened to the book?	Where you are?
What color is these?	How's this work?
What are you doing?	
What you doing?	
What __ do?	<i>Is and does</i>
What's that under here?	Is that alright, Daddy?
What's these, Daddy?	Is that off please?
What is that for?	Does it go, Daddy?
	Do I get Coca Cola?
	You gonna wipe that off?
<i>Can and could</i>	<i>Want</i>
Can I pick it up by my hands?	Wanna bite?
Can I have more Coca-Cola?	You want some too?
Can I play with that toy?	Want some too?
Can we eat it?	Want some that tea?
Can I have a bite?	
Could I get a knife?	
Can you hold me?	

Note: Entries in this table exclude *Where* questions, *What's that?* questions, and simple sentences uttered with a questioning intonation.

seem to be of comparable complexity. *Are* is mostly omitted (6 of 7 possible times) until the final week in which it is used correctly on both possible occasions, indicating T's difficulty with the obligatory number agreement. In the middle of this month-long period, T also has trouble ordering elements and produces questions such as "Why he's not in his bed?" and "Why his feet are cold?" During this same period, however, she is producing comparable sentences with correct ordering. There are no mistakes during the last week and even one *why*-question in the past tense: "Why was it an accident?"

Why-questions using the auxiliary *do* were more difficult for T. She uses the past-tense *did* correctly in six questions but omits it in seven sentences of seemingly comparable complexity. She correctly produces three questions with other forms (*don't*, *do*, *does*) but omits these forms in four comparable cases. T has special trouble coordinating where to put the tense marker in seven other cases, that is, she says things such as "Why he left his toy here?" in which the auxiliary *did* is omitted and the tense marker is put into the verb form *left* (i.e., the correct form is "Why *did* he *leave* his toys here?"). Again this difficulty is a bit puzzling as T produces very similar sentences in the correct form throughout the

Table 6.11. *T's use of why-questions as a function of the auxiliary form required*

Age	With <i>to be</i>		With <i>to do</i>	
	Correct	Incorrect	Correct	Incorrect
27.03	are		don't did	missing (do) (+ tense)
27.04	is			
27.05	's	missing (are)		missing (do)
27.06	is		did	missing (did)
	is		did	(+ tense)
27.07		order (is) order (are) missing (is) missing (is) missing (are) missing (are)		missing (did) missing (did)
27.08				
27.09	is	order (are)		
27.10	's	missing (are)		
27.11	is			missing (does)
	is			(+ tense)
27.12			did	
27.13		order (am) order (am)	did does	missing (does) (+ tense)
27.14	's			
27.15				missing (did) missing (did) missing (do)
27.16		missing (are)	do	
27.17	is			missing (did) (+ tense) x 2
27.18				missing (do)
27.19	are			missing (did)
	is			missing (do)
				missing (did)
27.20				missing (does) (+ tense)
27.21	is			
	was			
27.23	is		did	
	are			
	is			

Note: For each day (age) each correct sentence is represented by the auxiliary verb it used. Incorrect sentences are identified by the mistake made, either omission or commission, with the correct or required form in parentheses. See appendix for the actual entries, which are in exactly the same order as the shorthand coding here.

period of study. And it is not the case that the correct sentences used verbs that did not change their form in present and past tense (with one exception); thus, before the mistake just reported she had already said such things as "Why did Paul leave his car?" T is still making many

mistakes – both of omission and of commission in combination with tense marking – in the final week of recording.

6.3.3. *Sentences with two verbs*

During the 18- to 20-month period T produced a number of sentences that had a verb and a word that used to function as a verb at some previous period. Thus, she uses words like *more* and *back* with true verbs in sentences such as “Need more jello.” The same is true of the verb particles *on*, *off*, and so forth, for example, “Get these off here.” These are not sentences with two verbs in the current analysis.

T’s first sentences with two verbs both functioning as verbs come in the 20- to 25-month period (see appendix for a list). There are 27 entries. During the 20- to 21-month period T says “Stop push me,” “Watch me doors open,” and “Step cook dinner.” None had an unequivocal meaning. During the 21- to 22-month period, T creates a productive pattern with *come*: “Come get me stuck” (20.27), “Come-on sit me” (20.28), and “Come help me” (21.02). Also during this period she produces two sentences that would be compound sentences using *and* in adult English: “Bring a paper-towel wipe me off” and “Go seven-eleven buy more coca-cola.” Although the interpretation of these sentences is difficult in some cases, in Bowerman’s (1979) analysis these would all seem to be complex sentences of the coordinating variety, that is, the verbs are on an equal footing so to speak (i.e., the adult gloss is “You come *and* you help me”). During this same period, however, T developed a productive two-verb strategy that created clearly subordinated clauses. She did this with the matrix verb *look*: “Look at girl drinking a kool-aid” (20.04), “Look Weezer climbing a tree” (20.04), and “Look at Pete eating a bone” (21.10). During the 21- to 22-month period she also produced: “Have Mommy fix it” and “Mommy gave that for me to eat,” which also appear to be subordinating complex sentences.

During the 23- to 25-month period, T produces three more compound sentences: “I go outside talk to Maria,” “Take this away and put it on the table,” and “You stay here and I throw it to you.” She also produces nine more subordinating sentences. Four of these are “I’m sorry I coughed at you,” “That’s the kind of jelly I want,” “I love to eat pretzels,” and “It’s fun to play with puzzles.” The other five all use the matrix verb *want*: “I want to take one at a time,” “I want to get in your lap,” “I want to hold your tea,” “I want to draw with Stu’s pen,” and at 26 months, the only recorded case of a true relative clause (with relative pronoun) “I want that toy that I found.”

Table 6.12 provides an organized listing of T’s sentences with more than one verb. Coordinate sentences would of course not seem to involve

Table 6.12. *T's sentences with more than one verb in the 19- to 25-month period*

Coordinating	Subordinating
<i>Come</i> Come get me stuck Come on sit me Come help me	<i>Look</i> Look at a girl drinking a Kool-aid Look Weezer climbing a tree Look at Pete eating a bone
<i>Ill-formed</i> Stop push me Watch me doors open Step cook dinner	<i>Want</i> I want to take one at a time I want to get in your lap I want to draw with Stu's pen I want to hold your tea I want that toy that I found That's the kind of jelly I want
<i>Others</i> Go 7-11 buy more Coca Cola Bring a paper-towel wipe me off I go outside talk to Maria Take this away and put it on the table Pick that coffee up drink Get more Coca Cola right back You stay right there and I throw it to you	<i>Others</i> Have Mommy fix it Mommy gave that cereal for me to eat I'm sorry I coughed at you I love to eat pretzels It's fun to play with puzzles

any special cognitive or linguistic abilities over and above those already involved in her use of language. The subordinating sentences, however, raise the specter of recursion, thought by many to be a special linguistic property not present in any other cognitive domain (e.g., Chomsky, 1968). Needless to say it is a great advance for the child to learn this, but inspection of T's earliest recursive sentences shows that they involve a limited set of matrix verbs that take whole clauses as arguments, and, in fact, all of these matrix verbs first took simple noun phrases in these argument slots. In any case, this strategy is productive for T in the beginning with only a few specific matrix verbs (which agrees with the findings of Bloom, Rispoli, Gartner, & Hafitz, 1989); presumably, as with many of her other linguistic skills, this strategy will become more widely used later.

6.4. Summary

By way of a brief summary of this chapter, T had a variety of sentences without verbs early in her development. Many of these would require a copula in adult English, and T came to acquire the copula for many of these functions during the later phases of the study. T's noun morphology – that is, the plural *-s* and the possessive *'s* – would seem to be

totally contrastive and productive quite early. T's verb morphology would seem to be tied to individual verbs and forms; thus, she has several contrastive and productive irregular past-tense forms after 20 to 21 months, but many other verbs where there is no such contrast. There is certainly no productive morphology for forming the past tense. The same general conclusion holds for the present progressive: T only used it with a few verbs after 19 to 20 months. The expansion of T's noun phrases was limited. For the most expanded arguments, objects, T modified nouns with adjectives and/or articles, not more than two at a time. Actors and locations were expanded less, with very few cases of two modifiers. It is important to note that in many cases T's objects were the comment part of the sentence, consisting of new information. Finally, it must be noted that T was beginning during the latter stages of the period studied here to construct negatives, questions, and complex sentences that contained two verbs. These presented T with a variety of auxiliary, agreement, and ordering problems, which as the study was ending she was in the process of beginning to solve for a limited set of structures. In general, the unevenness of development in all of these aspects of T's grammar – many structures were learned in conjunction with one or two verbs first and only later generalized – argues for a model in which the child's emerging structures begin in a verb-specific manner and only later generalize.

The development of T's verb lexicon

In chapters 4 and 5, my focus was on the details of how T learned and used each one of her first verbs. In this chapter my aim is to extract from these detailed analyses some more general patterns in the development of T's verb lexicon. In particular I focus on general patterns in the cognitive structures underlying T's early verbs, and general patterns in the social–pragmatic contexts in which T learned her early verbs. In both cases there are marked differences between verbs and the more commonly studied word class of nouns. In a final section of the chapter, I attempt to make clear the implications of these differences for theories of lexical acquisition and development.

7.1. Cognitive bases of T's early verbs

Table 7.1 lists all of the 162 relational words and verbs T learned prior to her second birthday, organized according to conceptual category and age of first productive use. As stated previously, the conceptual categories are not posited as a part of T's grammatical system; they are a heuristic for researchers and, at most, may depict something of the conceptual relatedness of these linguistic items for T. It should be noted that T's presymbolic forms are not listed, but her words that were originally presymbolic and then symbolic are listed (under the date of their first symbolic uses). As in the previous detailed analyses, the most productive approach to these data is to consider change of state and activity verbs separately.

7.1.1. Change of state verbs

The major conceptual distinctions underlying T's acquisition of change of state verbs are presented in Table 7.2, as a function of semantic domain and age in months. Note that for heuristic purposes I have consolidated the two presence–absence–recurrence domains (concerning objects and activities) as well as the movement and location domains.

Table 7.1. Emergence of T's verbs as a function of age in months

	16	18	20	22	24			
Presence-absence recurrence of objects	Where Hi No Bye	More Gone	Find Morning Off Go-away	On Make Made	Another			
Presence-absence recurrence of activities	No	Again	Help Stop	Too With-me Self	Do-it Turn Finished Over	Leave-alone Let-go Share Use	Wait Hush Keep Left Buy	
Exchange-possession of objects	Thanks	Get-it	Back Here-go	Got Hold	Have Give-Gave			
Movement of objects	Move Stuck	Stay	Go	Come Put	Bring Get-out	Take		
Location of objects		Up Down	On Off	In Out	Over Under	Here There		
State of objects	Woops	Fall-down	Open Close	Fix Drop	Break Spill Brush	Tear Crack		
Activities with objects		Uh-oh Sweep Draw	Hammer Read	Lock	Wash Clean Paint Working Write Cover Button			
		Catch	Ride Roll Hit	Throw Pat Stick Eat Drink Ate	Drive Kick Squeeze	Rub Swallow		
		Play	Bite Kiss Step-in	Blow Chew Pick Burn	Lick Kill Hug Wipe			
Activities without objects		Push	Sit-down Jump	Swim	Pull Lay-down Walk	Run	Lift Pour Climb Stand	
		Crying Pee-pee		Wave	Clap Swing	Singing Sleeping Screaming		
		Hurt	Scared	Sorry Told	Try Called	Like Love Hungry	Taste Smell Mean-to Said	Listen Feel Remember

Table 7.2. *Types of conceptual distinctions underlying T's acquisition of change of state verbs*

	Appearance- disappearance- recurrence	Exchange and possession	Movement and location	State of objects
16 - 17 months	CONTENT/ DIRECTION (Where, No, Hi, Bye)	CONTENT (Thanks)	CONTENT/ DIRECTION (Move, Stuck)	CONTENT (Whoops, Uh-oh, Fall-down)
17 - 18 months	INITIAL STATE (More) CONTENT (Gone, Again, All-gone)	CONTENT (Get-it)	CONTENT/ DIRECTION (Up, Down, Stay)	
18 - 19 months	CONTENT/ DIRECTION (Find, On, Off, Morning, Help, Go-away, Stop, Too, With-me)	DIRECTION (Here-go) INITIAL STATE (Back, Hold) END STATE (Got)	CONTENT/ DIRECTION (Go, Come) CONTENT/ DIRECTION (On, Off)	CONTENT/ DIRECTION (Open, Close) CAUSE (Drop, Spill)
19 - 20 months	CAUSE (Make) END STATE (Made) CONTENT (Self)	CAUSE (Give) END STATE (Have)	CONTENT/ DIRECTION (In, Out) CAUSE (Put)	CONTENT/ DIRECTION (Fix, Break) END STATE (Broken)
20+ months	CONTENT/ DIRECTION (Another, Turn, Do- it, Leave-alone, Let-go, Wait, Hush, Over) END STATE (Finished)	CONTENT/ DIRECTION (Share, Use, Keep, Left, Buy) END STATE (Gave)	CONTENT/ DIRECTION (Over, Under, Here, There) CAUSE/ DIRECTION (Bring, Take, Get)	CONTENT/ DIRECTION (Tear, Crack)

The distinctions invoked in this table involve general categories of the most important distinctions T employed. Obviously, she made many more detailed distinctions – at least one per word, in fact. These general categories of distinction may be operationally defined in terms of the formal diagrams used to differentiate these terms as explicated in chapter 4, that is to say, in terms of the entities, states, and ordering of states that characterize the use of particular words.

Within the framework of the formal method of semantic analysis used, five general types of conceptual distinction may be made in T's change of state verbs. As each word is first learned, its distinction from other words may be made on the basis of:

1. Directionality – the conceptual diagram for a newly learned word has the same basic elements as an existing diagram, but in reverse order (i.e., the initial and final panels are interchanged).
2. Initial state – the new diagram is similar to an existing diagram, but differs with regard to an initial state that is either added to the existing diagram or substituted for the original initial state.
3. End state – the new diagram is similar to an existing diagram, but leaves out an initial transformation in the existing diagram, preserving only its end state.
4. Causality – the new diagram adds a causal element to an existing diagram.
5. Content – the new diagram requires the introduction of some new semantic element(s), other than those involving initial states or causality.

I discuss each of these in turn. First, in each of the conceptual domains of Table 7.2, there are words that are basically “opposites,” that is, they are distinguished from each other on the basis of their directionality. Depending on precisely how opposites are defined (e.g., whether to include pairs such as *move* and *stay* – or even *move* and *stuck*), T had 16 such pairs of opposites in her early change of state verbs: *hi-bye*, *on-off* (existential), *stop-do*, *help-leave alone*, *thanks-here go*, *share-keep*, *move-stuck*, *up-down*, *go-come*, *on-off* (locative), *in-out*, *bring-take*, *over-under*, *here-there*, *open-close*, and *fix-break*. Not all of these are precisely defined opposites, but most are very close. Of these 16 pairs, 13 were learned within roughly 1 month of each other. (A similar phenomenon was noted by Dromi [1987] who found her child learning groups of related object words in very close proximity.) There are a number of factors that might explain the developmental proximity of these word pairs. The most obvious is that the close conceptual similarity of the words allows the child to simply reconfigure known conceptual elements, without having to identify any new elements. It is also possible that once a child begins using a word that has a clear opposite in adult language, her parents are drawn into using that opposite in various instances of the same context (e.g., the child says “In” as she puts it in, leading the adult to take it out and say “I’ll take it out”). Obviously, these are not mutually exclusive explanations.

Second, in two of the four domains of Table 7.2 are words that differ from previously learned words on the basis of their initial state. Thus, *more* is a request for food in the case in which T just finished some of that same type of food, *back* is a request for an object that was just taken from T, and *hold* is a request for an object that someone else is physically

holding. These were all learned within a few weeks of 17 months, and all of them were variations on a more basic theme for which T already had a word: requesting food by name before *more*, *get-it* as a request for objects before either *back* or *hold*. There are no cases in which this developmental pattern is reversed.

Third, in three of the four change of state domains, words appear that are distinguished from one of T's existing words by virtue of its reference to the end state of that word's transformational diagram. The first four words of this type are *gone*, *got*, *made*, and *gave*. Each of these is learned within about 2 months of its corresponding dynamic form. (For *gone* I am counting *whereda* as the corresponding dynamic form, even though they are clearly not roots of the same word as the others are. But the conceptual diagrams of *gone* and *whereda* relate in the same way as the others.) After 20 months, the static *finished*, as an announcement of a state of completion, was learned soon after the dynamic request for activities *do-it*. There are no cases in which this developmental pattern is reversed.

Fourth, in each of the domains of Table 7.2, words appear at some point that require the use of a causal agent (an arrow in the conceptual diagrams). These are manifestly not coterminous with T's verbs that would be classified as causal in adult language. These are the words that T distinguishes from other words involving the same transformation solely on the basis of whether a causal agent is involved. For example, requests that someone "give" her something are distinguished from all of the other ways that she can request an object (naming it, asking to "hold" or "have" it, etc.) by the fact that a particular person is expected to "cause" the transfer. Another example is T's word *bring* which also requires a causal agent, in this case to distinguish it from the less specific *come*.¹ A similar story could be told about *put* and the generic *move*. *Get* and *make* seem to evolve over time from noncausal to causal usage. *Whoops* and *uh-oh* were used throughout as global markers of unexpected happenings, but *drop* and *spill* seem to be distinguished from these as ways of identifying that a particular person "caused" (unintentionally) an accident. The lag time in these cases – that is, the time between the causal word and its noncausal predecessor – is not so short in some instances (over 3 months in some instances). In this case, however, the interesting pattern is that the first manifestations of causal distinctions first emerge in words in all four domains at around 19 months. This might indicate, in contrast to the previously discussed distinctions, that causality is a

¹ Note that T originally used *come* with objects in such sentences as "Birthday-cake come-in too" and "Umbrella coming too," where she would later use *bring*. In cases where she would later use *take*, I do not believe she had an expression.

concept that can only be employed by T in her semantic structures from about 19 months of age; it then is used widely at that time.

Finally, content is my term for all of those cases in which a new element other than initial state or cause is added to the diagram. The content distinctions fall into two general classes: differences in the particular states involved and differences in the entity undergoing the change of state. First, all words that are the first uses of their kind by definition involve new particular states, for example, *where* is the first reference to disappearance, *thanks* the first reference to exchange, and *move* the first reference to change of location. Further, especially in the movement–location and the state of object domains, new words relying on new state distinctions were being added by T continuously throughout the period of study; for example, quite early T learned a variety of words concerning movements involving different locative states (*on, off, here, there*, etc.), and a bit later she learned words for various other nonlocative states of objects (*open, break, tear, crack*, etc.). In both cases, the particular objects involved are irrelevant; it is the states they are in that are critical and verb-defining.

The second content distinction concerns the type of entity undergoing a particular transformation. Thus, in the presence–absence–recurrence domain, the type of entity involved is a key distinguishing element. For example, the basic disappearance situation has different words depending on whether the disappearing item is food (*all-gone*), a person (*bye-bye*), lights and other mechanical devices (*off*), or various activities (*finished*). The content distinction concerning the type of entity involved does not distinguish words from one another in any other conceptual domain (with the possible exception of *spill* versus *drop*). A particularly interesting developmental pattern in this regard involves the use of activities as items that appear, disappear, or recur. In each case there is a clear developmental priority for transformations in which the entity is a class of objects over comparable terms in which the transformation involves an activity. Thus, *whereda* and other words for object disappearance appear before *finished*; *no* as object refusal appears before *stop* as activity refusal; *make* and *find* as requests for causing an object's appearance are learned before *do-it*; and *more* for the recurrence of objects is learned before *again*. The latter word in each of these pairs demonstrates that T is able to conceive of an activity as a type of mental object capable of itself undergoing a transformation. The fact that in each case the word for activities was preceded by the word for objects suggests the hypothesis that it is somehow easier to bundle and use objects, rather than activities, as conceptual elements in larger transformational concepts.

I would also like to note two areas of unexpected complexity of se-

mantic analysis, for which I had to modify the basic scheme of analysis as I had originally conceived it. First, in the exchange–possession domain, T learned a variety of words for complex variations on the basic transfer and possession situations. In particular, she learned words for indicating when she wanted to *use* or *share* something, and for when she *left* something somewhere. Each of these involved a subtle interplay of possessive and locative notions involving more than one person, for example, notions that an object could be possessed by two people at once or notions that one person could be holding the object at the same time that another owned it. Quite unexpectedly, the basic analytic scheme adapted to these situations readily, without any significant alterations, and was in fact instrumental in helping me to perceive the relevant distinctions.

A similar situation occurred with the more complex of the presence–absence–recurrence of activities words: *help, too, with-me, self, turn, leave-alone*. Many of these are not adult verbs, of course, but T used them to request complex changes of state involving herself and other people – such things as another person joining T in an activity, or T joining them, or T performing an activity while the other person refrained. Once again in this case of complexity, the analytic scheme adapted readily and was helpful in explicating the relevant distinctions. In this case, some new conventions had to be added to the scheme (for two people simultaneously engaged in an activity, e.g.), but these did not represent major changes.

Overall, then, the method of semantic analysis employing objects in their spatial, temporal, and causal relations – the basic building blocks of sensory–motor cognition – was sufficient to differentiate all of T's change of state verbs from one another. The extension to complex cases was quite natural and did not involve the addition of any elements that were cognitively implausible for children of this age. Moreover, in looking at general categories of distinctions, it was found that in some cases the previous acquisition of one word or words was fairly strongly associated with acquisition of a word or words related to it in specific ways, for example, as its opposite or as its end state or as its activity (as opposed to object) form. This would seem to suggest that perhaps the child finds it easier to package a new lexical concept when many of the conceptual elements involved are already present in the conceptualization of other words. The case of causality would seem to be a bit different in that there was an age before which T could not use this as a distinguishing feature of her words no matter what other words she knew; when the conceptual element became available it was used as a distinguishing feature in one or more words in each domain in a relatively brief time period.

I would like to point out here also that the kinds of conceptual elements underlying T's early change of state words are precisely those that are hypothesized as being at the root of much of the more abstract forms of human cognition (Lakoff, 1987): notions of in-out, on-off, over-under, possession, force dynamics, and so forth. Much of this is spatial, of course, and many people have noted the important role of basic spatial notions in structuring abstract thought (see, e.g., Jackendoff, 1983). Following words for these basic concepts as their use – both literal and metaphorical – changes during developmental periods subsequent to those of the current study would be most interesting and profitable, I believe, and might even provide a focal point for discovering something about the transition from concrete to abstract thought.

7.1.2. *Activity verbs*

T's activity verbs present a very different picture, and, as stated at the outset of chapter 5, they do not really seem to fit into domains as change of state verbs do. With a few minor exceptions, there is nothing comparable with directionality or entity involved in any of these words, that is, there are no words distinguished only by these conceptual components. There are few if any words that are distinguished from others on the basis of particular initial states or end states. And although causality is a part of the adult conceptualization of many of T's activity verbs (e.g., *kill*), in many cases T's use of these words was so tied to a particular set of objects or activities that the concept is not a salient one; even more important, in almost no case is causality needed to distinguish one activity verb from another.

Overall, T's activity verbs simply do not seem to show much development in terms of increasing conceptual complexity. Each concerns a particular activity – defined either in terms of the particular sensory-motor schemes involved or the activities characteristically used with particular objects. Many activity words were initially associated either with a single object type (e.g., a broom) or with a single action context (e.g., playing a push-down game at the pool).² Because by their very nature activity verbs are more tied to particular contextual features than the more abstract change of state verbs, in some cases this narrowness continued into more mature usage (e.g., *paint*). Thus, even within narrowly defined semantic domains it is difficult to see any increases in complexity in the developmental progressions: *sweep, brush, wash, and clean*; or *hit, touch, pat, stick, squeeze, and rub*; or *see, look, watch, taste, smell, listen, and*

² Interestingly, from the beginning it was mostly the activity words that were difficult to distinguish from the pre-symbolic forms.

feel. The development of these words conceptually is mainly in terms of the decontextualization of each from its initial learning situation (cf. Smith & Sachs, in press). With very few exceptions, T's activity verbs are all on an equal conceptual plane.

The method of semantic analysis used for T's change of state words was not well suited to T's activity words. The reason for this was that the method was designed to describe the behavior of objects in certain kinds of medium-level spatial transformations. Thus, the method handles nicely any changes of state in which objects change location, possession, or locative states because these states can be designated for the most part iconically in terms of objects "in" things, "at" locations, and so forth. But the method is not particularly helpful when what is at issue are activities defined in terms of particular bodily movements or actions involving particular objects. This does not mean that it could not be adapted. It could be adapted because activities can in some sense always be reduced to changes of state. I could have depicted, for example, a hammer not in contact with something and then in contact with something (perhaps iterated) for the activity verb *hammer*. I could have depicted a person's mouth inhaling air and then expelling it onto something for *blow*. But iconic representation in these cases where content is crucial (there must be a tongue for there to be licking, legs for there to be prototypical running, etc.) would amount to nothing more than a schematic drawing. Such reductions may be helpful at some point, but they did not seem so here.

I should also mention that iconic in all cases has meant visually iconic in this study. It is possible that children define some of their activity verbs (e.g., *push*, *smell*, *swallow*) in nonvisual, mostly proprioceptive terms. I have no good ideas about how to represent these words. Nor do I have any great ideas about the various mental-state words that young children use such as T's *sorry*, *try*, *hungry*, *listen*, *feel*, and *remember*. I can only assume that young children have social-cognitive concepts involving the way people perceive, feel, have intentions, and the like, that underlie their early words of this type. I am nevertheless committed to trying, at some point, to describe these words in terms of concepts relevant to the child's cognition at this developmental period.

7.1.3. Child basic verbs

Mervis (1987) proposed that young children's early object categories, as indicated by their early object labels, begin at a basic level (i.e., neither subordinate nor superordinate). But what is basic may differ for adults and children, and thus she proposed that there is a kind of child basic level that, all other things being equal, is the level at which beginning

language learners prefer to start in learning their first nouns. There have been several specific hypotheses about the concepts underlying children's early verbs that might be relevant for establishing something such as child basic verbs. I will discuss three.

First, building on her previous research, Huttenlocher (1991) hypothesized that the acquisition of words for movement and change (e.g., *off, out*) are acquired before words for intentional action (e.g., *get, push*); the former are common in the 12- to 16-month age range, whereas the latter do not emerge until around 19 months. The words for intentional action are used first for self-actions and only later for those of others (Huttenlocher, Smiley, & Charney, 1983). These hypotheses are based on the idea that young children find it difficult to conceive of intentional action, especially that of others.

While everything rests on how the various words are classified, of course, overall T's productions would seem to provide only mixed support for Huttenlocher's hypotheses. T's earliest verbs were indeed words for nonintentional movement and change (*whereda, more, gone, etc.*), but within that same time frame (and well before 19 months) she also learned clearly intentional change of state verbs such as *move, get, stay, push, and stuck*; she also used quite early some other seemingly intentional activity verbs such as *catch, cry, play, pee-pee, fall-down, bite, hurt, cut, and draw*. Moreover, with regard to the issue of self versus other actions, from quite early on T commented on or requested the actions of *others* with her intentional verbs, for example, that someone was "Crying" or that they "Fall-down" or that they needed to "Move" or "Get-it" for her. It is also important to note that for a number of somewhat later intentional verbs, comments on the actions of others were their first and only use (*make-made, called, told, buy*). I thus do not find strong support in T's early language for the hypothesis that words for intentional action are difficult to acquire. And my analysis of the self-other distinction corroborates the analysis of Edwards and Goodwin (1986) who concluded: "The data we have examined do not support the hypothesis that difficulties in conceptualizing other people's mental processes and intentions hinder the description of the change-of-state of objects" (p. 269).³

Second, another obvious candidate for a cognitive factor affecting the acquisition of verbs is their cognitive "complexity." Edwards and Good-

³ Overall in T's earliest language there was a predominance of change of state words relative to activity words (and these were used more frequently). However, one reason for this is the fact that several early activity words were classified as presymbolic forms because they were used in only single contextual situations. If we are more generous with these, then T's change of state words did not have developmental priority at all, and there is no predominance of verbs of either type after the first month or so. Also, a brief look at some other diaries shows that other children learn both verb types equally early (e.g., in Mervis's unpublished diary data and Bloom's [1973] Alison).

win (1986) make such a suggestion, but they do not specify precisely what they mean by it. They say only that they would expect earlier acquisition for "the simpler sorts of state change, such as perceivable locative changes (*open, go, pick up, fall*, etc.), in contrast to the more complex transformations (*clean, fix, cook*, etc.)" (p. 262). This is obviously a difficult evaluation to make without more precision about what is meant by "simpler." One complicating factor, for example, is that the child may use a word more simply than the adult. Thus, T used all three of the words Edwards and Goodwin consider complex early in her language development. But in all cases they seemed to be used in very concrete ways: Thus *clean* was just wiping with a cloth, *fix* was just hammering on things, and *cook* was playing with pots and pans. They were so simple, in fact, that I considered them all activities rather than the changes of state they are in adult language. Everyone would agree, however, that there is some notion of cognitive complexity that would help explain order of acquisition.

One important notion of complexity is the number of objects involved in an activity or change of state. In adult usage, there is only one object undergoing a transformation in *more* or *fall-down*, but three objects or people in *give, told*, and *called*. Because of this added relational complexity, we would expect the latter group to be learned later. If they are learned early, they should be learned in a scaled-down version involving only a single object, for example, the child might request *give* (or *gimme*). It is not a straightforward matter to determine how many objects underlie a child's use of a verb, however. If we say that the verb relates as many objects as there are object labels (or proforms) in T's sentences using the verb, then there is a general trend toward progressive complexity as T's sentences get longer. (This is clearly not absolute, however, as verbs like *make* and *gave* have more arguments than other verbs at the same time, refuting the notion that some growth in general processing capacity might determine in a strict way the order in which T learned her verbs; cf. Bloom, 1991.)

Also important might be the number of objects involved in the adult usage of the early verbs that T learns, regardless of how she uses them productively. This might indicate, in some loose way at least, conceptual complexity. Table 7.3 lists all of T's earliest verbs and relational words, that is, those learned prior to her 18th month. All of these were used at this time either as single-word utterances or in combination with a single object label or proform, meaning that T expressed with them no more than one argument. On the other hand, they are grouped in the table according to their most typical adult usage in a similar context, that is, the number of arguments that might potentially underlie a verb if T had an adultlike representation when she used it.

Table 7.3. Number of arguments in the adult use of verbs that T used singly or in two-word combinations prior to 18 months

	16 - 17 months	17 - 18 months	
One or no arguments	Where Hi Bye No Thanks Stuck	Crying Pee-pee More Gone All-gone Again Go	Fall-down Here-go Up Down Woops Uh-oh Stay
Two arguments	Move (?)	Help(?) Bite Get Sweep Catch	Cut Draw Play Push Hurt

Note: These are classified according to the number of arguments in adult use, in contexts similar to that in which T used it.

It can be seen in this table that T's seven earliest relational words, learned at around 16 months and most of which are not adult verbs, could only conceivably concern either one or zero arguments. The one possible exception is *move*, which in adult language is a transitive verb. However, it should be noted that at this early stage T's parents and T both use this word only as a single-word request – to exhort things to move out of their way (as in “Move!” to the dogs). The second wave of relational words and verbs during the 17- to 18-month period also include many that could only conceivably include one argument – the thing undergoing the transformation or performing the activity (e.g., *crying*, *gone*, *fall-down*), but many other of the words learned during this period are transitive verbs in adult language and so might be thought to involve two objects. However, once again, adult usage to T in many cases probably was in not totally transitive sentence frames, for example, “Do you want to draw?” “Catch,” “Bite it,” as was T's own subsequent usage.

Moreover, it is also important in this analysis to take account of who is the actor in these activities. When T says “Get-it ball” as she chases it, for example, it is possible to conceive of the conceptual situation underlying this utterance as involving only the ball, with T herself as actor not being an explicit participant. All of T's comments on the actions of

others that occur prior to around 19 months involve one object only, that is, T comments that things are "gone" or "stuck" or "off," or, when she verbally expresses the actor, that "Baby crying" or "Maria go" or "Fall-down man." The point is that the apparent exceptions to the fact that T's early verbs involve only a single entity – transitive action verbs seeming to involve both an actor and an object acted upon – *all involve T herself as actor*. If we hypothesize that when T is conceptualizing her actions on things she does not include in her representation herself as actor, then all of T's verbs prior to 18 or 19 months can be seen as explicitly involving only a single entity. My hypothesis is thus that children's earliest verbs are about single entities acting or undergoing changes of state or being acted upon by the child herself; they are not conceived as actions in which actors act on objects.

And it is even possible that this hypothesis may unite Huttenlocher's observations and those of Edwards and Goodwin and myself that are seemingly discrepant. The unifying outcome is this. Movement words are typically learned first because they typically involve a single object (either self or other person or object). Intention words may be learned just as early, however, if they only involve a single object, or the self acting on a single object. Words for others intentionally acting on objects involve two entities explicitly related conceptually, and so are acquired somewhat later.

A third and final proposal about the cognitive bases of early verbs was articulated by Bloom et al. (1975). The proposal is that words are learned for dynamic events before states (e.g., locative states). We might also hypothesize that words designating causal relations in such processes are also learned after the basic dynamic situation has been established (cf. Nelson, 1985). To examine this proposal, we must differentiate change of state and activity verbs.

In all four of T's conceptual domains involving changes of state, it is clear that the initial global terms, as well as other early terms, are at the dynamic level and that state terms emerge only later (see Table 7.4). The two most straightforward domains in this regard are movement–location and exchange–possession, with the other two domains requiring some qualifications.

In the domain of movement and location, T begins very early with the global expression *move* as a request for object movement. Soon thereafter she learned *stay* for the absence of object movement (*stuck* would seem to have both dynamic and stative aspects). T's locatives begin with the dynamic requests *up* and *down*, and proceed with other dynamic requests with *in*, *out*, *on*, and *off*. Soon after, she is using all of these locative terms (as well as others) to describe static locations or relations – always after the corresponding dynamic form (Tomasello, 1987). In

Table 7.4. *T's first dynamic, stative, and causal verbs as a function of change of state semantic domain*

	16 Months	18 Months	20 Months
Presence-absence recurrence of objects	Dynamic (Where, More)	Stative (Gone)	Causal (Make)
Presence-absence recurrence of activities		Dynamic (Again, Stop)	Stative (Finished, Over)
Exchange-possession of objects	Dynamic (Thanks, Get)		Stative (Have) Causal (Give)
Movement of objects	Dynamic (Move)	Stative (Stay)	Causal (Bring)
Location of objects		Dynamic (Up, Down)	Stative (At, By)
State of objects		Dynamic (Fall-down)	Stative (Broken)

the domain of exchange and possession T initially (16–17 months) had two global expressions for object exchange (*thanks, here-go*) and one for obtaining objects (*get-it*). Her first verb attributing static possession is *have*, which she learned 2 months later at 19 months. (Interestingly, only at 18 months can T express a static possessive relation with the possessive *-s*.) Thus, both static notions of location and possession seem to emerge from a dynamic base – in the one case object movement and in the other case exchange of objects among people.

The domain of presence–absence–recurrence begins at 15 to 16 months with T's *whereda* for requesting the presence of absent objects and *bye* for saluting disappearing objects. At 17 months she learns *gone* and *all-gone* to designate the absence as a static state. With regard to activities, T learns *no* (and later *stop*) quite early for requesting the cessation of activities. At 20 months she learns *finished* and *over* as comments on this same state. The presence–absence–recurrence domain thus also fits the pattern of dynamic before static, but there is one way in which it may be special. The problem is that many children seem to use *gone* as their first absence word, without any prior dynamic word for disappearance (though many may learn *no* or *bye*, e.g., first). There are two possibilities. First, in many cases the child's initial uses of *gone* are for a very specific perceptual situation, for example, an empty bottle or cup. In these cases, the word *gone* may not designate the end point of a process of disappearing, but is really more akin to a property of the object (e.g., empty) than to a durative state. The other possibility is that the dynamics of this situation have been encoded with something other than a verb, for example, most children can request absent objects by naming them and whining. In this case they would have a clear concept of the disappearance situation even without a verb that specifically encodes it, and thus it might be possible for the child's first absence word to be something such as *gone*, as a comment on the end point of a well-known situation.

The domain of state of objects shows a similar pattern. Dynamic words such as *woops* and *fall-down* are first to be learned by T. Further, T clearly uses *open* and *close* dynamically before she uses them to describe static states, and the dynamic *break* is learned before the static *broken*. But, again, there are certainly children who learn some specific state terms before their dynamic counterparts. For example, some children learn to identify a toy as “broken” before they talk about “breaking.” As in the case of “gone,” however, it is likely that in such cases the child is simply identifying some perceptual characteristic of the toy (its distortion) and not that it is in a state that resulted from an act of breaking. (Other ways of referring to this situation without a verb do not come readily to mind.)

Table 7.4 also shows that T does not designate a causal version of any

of these situations until after the dynamic verb has first been learned and used. This is due in some measure to the methodological procedure followed in the current study. If T learned her first word in a domain, I would never automatically assign it a causal meaning. That would await the acquisition of another word from which the more global word had to be distinguished. I have defended this procedure elsewhere, but in the current context the important point is that until T has at least two related words from which she must choose, one causal and the other not, causality is not assumed to be operative in her semantic system.

T's activity verbs do not employ the dynamic–static and causal distinctions in this same way. Most of T's activity words do not even have static counterparts, and for most words that do the only way to express a stative version is to form their past participle (e.g., *sweep* → *a swept floor*, *burn* → *a burnt roast*) or to nominalize them (e.g., *throw*, *step*, *pat*). For whatever it is worth, T has almost none of these stative participles or nominalizations for her activity verbs. With regard to causality, almost all of T's activity words would be considered causal (transitive, agentive) in adult language, and T expresses her knowledge of this by naming the actor (agent) in some cases (though in many she never expresses the agent). But, unlike change of state verbs, T does not learn different activity verbs that are causal and noncausal versions of one another (the closest would be *see*, *watch*, and *look*, but I do not believe that causality or agentivity is what differentiates these).

The fact that T's activity verbs did not show the same developmental pattern as her change of state words provides support for the argument that the findings for change of state verbs are not an artifact of the method of semantic analysis used in the current study. That is to say, it is clear that the method used with the change of state words does not generate developmental patterns such as dynamic before static or causative *ex nihilo*, because it does not generate them for activity verbs. It is possible, of course, that if we had a good theory of the sensory–motor conceptual elements involved in activity words, there might emerge some basic themes like “wiping actions,” “impacting actions,” “transporting actions,” “social actions,” “ingestive actions,” “mental actions,” and so forth, and that we would see such patterns more clearly. If there are such classes, however, there are many of them and the developmental patterns are much subtler than in the case of change of state verbs.

Looking across all three of these individual analyses makes clear that T felt most comfortable forming her early verb categories in certain well-defined ways, her child basic level. The foregoing analyses would seem to indicate that for both change of state and activity verbs she began with processes that involve only a single object (in some cases with herself as actor). The precise verb categories she formed on this basis differed

from adult verb categories in many cases. In the case of change of state verbs, the prototypical child basic situation was a transformation, defined in terms of relational elements. Thus, such words as *move*, *stuck*, *get*, *go*, *find*, *stop*, *come*, *open*, and *fall-down* all indicate conceptual situations whose only commonality is some pattern of spatial-temporal relations (e.g., "getting" may occur for any object, in any of a variety of ways, involving different specific activities). For these verbs, the child basic level involves a dynamic verb – analogous to the "middle level" characteristic of child basic object labels – which may then provide the basis for verbs indicating the static and causative aspects of those same conceptual situations. The prototypical situation for child basic activity verbs, on the other hand, involves very concretely perceptible types of sensory-motor action – such things as *sweep*, *wipe*, *jump*, *draw*, *see*, and *catch*. These are not defined by abstract relations such as recurrence, or movement toward or away, but rather by the characteristic actions involved, defined in terms of specific objects and body parts moving in specific ways (in the case of perception or mental verbs, specific covert actions must presumably be hypothesized). Dynamic-static-causal distinctions are not particularly important in distinguishing activity verbs from one another, and thus these verbs would all seem to be on the same level of conceptual complexity.

The different conceptual bases of change of state and activity verbs are responsible, in large measure, I believe, for their different developmental profiles. My reasoning is similar to that of Huttenlocher and Lui (1979), who were concerned with differences between nouns and verbs. They argued that whereas nouns designate "independent entities," verbs designate concepts that have "many elements of meaning that cut across semantic fields (e.g., manner, intention)." Verbs are therefore more closely interrelated semantically. In the current case much the same thing could be said about activity and change of state verbs. T's activity verbs were based on the perceptual content of the actions involved: the precise limb movements that define running, for example. Her change of state words, on the other hand, involved a limited set of conceptual elements (e.g., particular classes of objects, particular locative and other states, causality), which were in many cases simply reshuffled to formulate the conceptualizations for new words – for example, by changing directionality, adding initial states, focusing on end states, and adding causality. The sharing of conceptual elements characteristic of change of state verbs thus leads directly to a developmental pattern in which each new verb must be carefully distinguished from related words, as in, for example, the developmental sequence *move* (all-purpose word for motion) → *come* and *go* (for motion relative to ego) → *bring* and *take* (for caused motion of an object relative to ego). This pattern gives the strong impression of the development of semantic fields, in which a

major task is to differentiate each word from the others that “surround” it (Barsalou, in press; Kittay & Lehrer, in press). Although we do not know as much about the conceptual elements that underlie activity verbs, there would seem to be much less interrelatedness of these verbs among themselves, and the concept of semantic fields seems much less applicable.

7.2. Contexts for early verb learning

The communicative contexts in which T most often learned her early verbs were different from those in which she learned most of her object labels. For the most part T learned her early object labels ostensibly in variations on “the original word game” (Brown, 1958), for example, when she asked “What’s-that?” of things, or when we named things as we read a picture book. In such cases the child knows in some nonlinguistic way that an adult intends to indicate a particular object within her perceptual field (perhaps a pointing gesture or a consistent visual regard by an adult) and then proceeds to associate a phonological form with that object. This does not, of course, tell the child the sense of the word – the features relevant for its meaning in the lexicon – because the adult might be referring to the object with some superordinate category name or some property name. Nevertheless, because children most often begin their noun-learning careers by acquiring object names at a child basic level and adults usually name whole objects, identifying referent objects is usually sufficient for appropriate (though not necessarily totally adultlike) noun learning.

As outlined in chapter 2, verb learning occurs in this way in only some limited number of cases, and in many cases ostensive contexts simply do not supply the child with enough information to solve the packaging problem presented by verbs (e.g., whether the sense of the verb is determined by its result, instrument, motion, etc., and whether causality is involved). In this section I have cataloged some of the contexts, both pragmatic and linguistic, in which T learned her early verbs. This serves as a prelude to the final section of this chapter, which speculates more widely on what these contexts, and the fact that children learn much of their language in them, might mean for theories of lexical acquisition.

7.2.1. Pragmatic contexts

The current data on the communicative context of parental speech are not systematic. They consist essentially of parental notes made at the time T began using a word. At this time, we asked ourselves retrospectively: Where did this come from? This procedure was followed system-

atically for the first few months (15 to 18 months). During this time we almost always felt confident that we knew exactly where a word came from. There was usually some routine or repetitive event in which the word was a focal point – almost always the same context in which T first used the word. Starting around the 18th month, however, it became harder and harder to determine a word's origins. We found ourselves guessing, and so we discontinued systematic recording of parental models soon thereafter. (In some cases after this time we recorded models for which our confidence was high.) Obviously, data such as these cannot be used to answer detailed questions, but they can be used – accurately and profitably, I believe – to discern some general patterns.

In broadest outline, there were four pragmatic contexts in which T learned most of her early (pre-18th month) verbs and relational words (there is also a fifth group of various performative contexts). Although there are variations on each of these and together they are not completely exhaustive, the four are:

1. A parent comments on T's activity or state (or asks "Are you _____ing?") while she is engaged in it.
2. A parent comments on a state or activity of another person or object (e.g., "It's gone," "She's singing").
3. A parent asks T about her intentions or desires (e.g., "Do you want more?" "Do you want to get down?" "Want to go?").
4. A parent requests something of T or another person (e.g., "Move!" "Get-it").

There is no question that for some of her words T received models of more than one type. But in most cases the parental notes prior to 18 months almost always stress one or the other of these four for any given verb (see Ninio, 1985, for documentation of parents' unifunctional tendencies in their speech to very young children). Table 7.5 presents each of T's verbs and relational words (and presymbolic forms) learned prior to 18 months, classified according to word class (change of state or activity) and the predominant (often exclusive) parental model recorded.

The first two contexts are ones that would seem to be most comparable to the ostensive learning situation. First, T is engaged in an activity and the parent comments "You're drawing" or asks "Are you sweeping?" This is the way in which T learned many of her activity words; the sporadic notes after 18 months indicate that this was also the predominant model for *lock-it* ("Are you gonna lock-it?" as she is doing so), *driving*, and *clean-it*, for example. Of the seven words learned in this way prior to 18 months, six are activities. The only change of state word is *hurt* (T's parents would ask her "Are you hurt?"). The other largely ostensive model occurs when a parent comments that an object or person is undergoing a change of state or is engaged in an activity, for example,

Table 7.5. Major type of parental model for each of T's verbs and relational words used prior to 18 months

	Change of state	Activity
Comments on activity of T	Hurt	Rocking* Phone* Dinner* Playing Drawing Sweeping
Comments on activity of others	Gone No Go Fall-down All-gone Stuck	Crying Tickle*
Asking about T's intentions	More Help Again Back Get-out Up-here Down	Game* Cake* Bath* Pee-pee
Requests to T and others	No Move Get-it Stay (other only)	Towel* Push Catch Bite
Performatives	Hi Bye Thanks Here-go Woops Uh-oh	Mma*

Note: Asterisks designate pre-symbolic forms.

the parent comments "Look at it go!" or "Fall-down!" or "It's gone." Interestingly, all of the comments about others except two concern states and changes of state. The two exceptions are *crying*, which her parents used both for T ("Why are you crying?") and for others ("The baby's crying") and *tickle* which was also used in both ways, but mainly to announce that a parent was about to "Tickle!" her.

The third contextual situation does not fit the classical ostensive model. On many occasions T's parents would ask her about her intentions, for example "Want to do it again?" "Want to get up-here?" "Want it back?"

“Want to take a bath?” “Do you need to pee-pee?” and so forth. These occur both with change of state words and activities (some of which are presymbolic forms). In the pure case in which the adult simply asks, the child cannot discern ostensively what change of state or activity the adult is referring to because it is not physically happening at that time. It is undoubtedly the case that on some occasions the adult will ask the child just as the change of state is taking place, for example, “Do you want to get down?” as they are placing her down, or “Do you want more?” as they are offering it to her, and in these cases something resembling ostensive learning may occur. This is unlikely in all cases, however, and a clue to this is the form of the word T learned in the two cases of true verbs in this group. For example, if T’s parents had commented on her act of urination they would have said something like “Are you pee-peeing?” with the progressive ending, as they did for so many other activities in progress. But T did not use the *-ing* form of this verb as she did with so many other activity words that had such models. The second example is *get-out*. If T’s parents had used this as a comment on T’s or their own activity they would have said “I’m getting *you* out” or “Are you getting out?” or “I’ll get *you* out.” None of these displays the form T used, namely, *get-out* (actually a fusional form that was recorded at the time as “Geout”) as a request.⁴ Given this analysis – and the failure of T’s parent to record any ostensive models for most of the verbs in this group – I conclude that T learned at least some of her early verbs from this pragmatic context alone.

The fourth pragmatic context concerns requests, mainly parents requesting things of T, but in some cases parents requesting things of others. T’s parents told her such things as “Catch!” when they threw her the ball and she was to catch it, “Get-it!” after she rolled a ball away, and “Push!” in a game in which she pushed people into the pool. Some of these requests were made on different occasions both of T and of others (especially the dogs). For example, both T and the dogs were frequent recipients of the exhortation to “Move!” when they were in the way (especially when in the doorway and a parent was carrying something) and the prohibitive “No!” when they were engaged in forbidden activities. One of these words was used exclusively with the dogs: “Stay!” In these contextual situations, the activity or change of state that the adult is requesting is not present when the adult utters the request, and so again ostensive learning in its pure form is not possible. These requests in combination with other model types might lead to ostensive learning, but again T’s parents did not observe any of these in most cases. And,

⁴ Note that the frame “Can you get out?” (also “Can you pee-pee?”) would be another form of the probing for intentions, not a comment on an ongoing activity.

once again, the forms that T learned indicate that indeed she was learning from the request itself. If a parent had followed up the request to "Catch!" they would have said "You caught it" or (unlikely) "You are catching it"; "Move!" could only be followed up by (both unlikely) "You moved" or "You are moving." But in all of these cases T learned the verb in a form consistent with learning from the requestive model itself (i.e., uninflected and as a request). Once again, then, I conclude that T learned at least some of her early verbs exclusively in this pragmatic context.

There were a number of other pragmatic contexts in which T heard verbs, of course; for example, in some cases the adult might comment on an action that was already completed (e.g., "You dropped it") or anticipate her own impending actions (e.g., "I'm going to pet her"). But these were not recorded as the *exclusive* contexts for any of T's verbs. Finally are the performatives *hi*, *bye*, *thank you*, *here-go*, *woops*, *uh-oh*, and *mma*. These each had consistent perceptual and pragmatic situations associated with them and so were probably learned ostensively.

Because the data on parent models are not exhaustive, it is possible that ostensive learning may have been more important in T's early verb learning than I have supposed. I do not believe this, however, and my skepticism is supported by the recent study reported by Tomasello and Kruger (in press) who found that young children are exposed to verbs in nonostensive contexts the vast majority of the time (over 60%) and, moreover, they learn verbs better in those nonostensive contexts. I will try to spell out the implications of these facts more fully in section 7.3, but for now I would just like to introduce the view that children learn new linguistic forms not by mapping them onto their current perceptual experience, as a dumb machine might, but rather by attempting to infer the intentions of the adult using the new form. Ostensive learning is nothing more or less than a special case of this process.

7.2.2. *Linguistic context*

The current data are not of much use in determining the role of linguistic context in T's acquisition of verbs. I merely point out what is obvious to all (e.g., Gleitman, 1990), therefore, that such contexts are not necessary for verb learning (nor, as argued in chapter 2, are they sufficient). T learned many of her verbs from very simple syntactic frames, for example, "Move," "Get it," "Find it," "Hammer it," "Look," and so forth. And it should be noted that in many of these cases the pronoun that could potentially serve as an aid to specify that the activity word indeed referred to an activity (and not to an object) was not recognized as such as T, as evidenced by her verbs of which *it* was an inseparable part (e.g.,

“Get-it,” “Find-it ducks”). In simple cases it is clear that the child can learn more or less directly how a novel verb relates to her current experiential situation without additional cues from the linguistic context.

I would also like to argue, for future reference, that in investigating linguistic contexts of verb learning, we should investigate more than syntactic frames à la Gleitman et al. Thus, for example, suppose that (1) the child observes Ernie hitting Burt over the head with a hairbrush and she understands nonlinguistically what is happening, (2) an adult says to the child “Ernie is hitting Burt with a brush,” and (3) the child knows the words *Ernie*, *Burt*, and *brush*. Knowing the object labels and their appropriate referents must surely be a big help in this situation even if the child knows no syntax. This is quite simply because she can see the actual situation and who is doing what to whom (a syntax of action, as it were), which provides solid information to inform her hypotheses about the meaning of the verb. This hypothesis has, to my knowledge, never been investigated.

My conclusion is thus that while linguistic context by itself may be neither necessary nor sufficient for verb learning, it is probably of great help in many situations for young children. Linguistic context must be conceived in broader terms than the narrow syntactic definitions proposed by Gleitman and her colleagues, however. Although I defer a discussion until the section that follows, linguistic information in the form of the Principle of Contrast is clearly a major source of information about word meanings as well.

7.3. Processes of early lexical development

In almost all discussions of lexical acquisition, the prototype of the word-learning situation is a child learning an object label in an ostensive situation. This paradigm is implicitly assumed by virtually all theories of lexical acquisition (e.g., Clark, 1973; Markman, 1989; Mervis, 1987; Nelson, 1985), and it is explicitly used in virtually all experimental studies of word learning (e.g., Banigan & Mervis, 1988; Schwartz & Terrell, 1983; Tomasello, Mannle, & Werdenschlag, 1988). But children learn other kinds of words, and they learn them in other kinds of social situations.

The analyses of this chapter have made it very clear that verbs differ from nouns in their conceptualizations (verbs are dynamic) and in the pragmatic contexts in which they are learned (verbs are learned quite often in nonostensive contexts). What is needed at this point is an account of lexical development that integrates these differences into one coherent theory. I am not capable of such a feat at the current time, but I would like to make two suggestions toward such an integration: one concerning

the conceptualizations underlying different types of early words, and one concerning the nature of the social-pragmatic skills necessary for lexical acquisition.

7.3.1. *Conceptualizations underlying nouns and verbs*

Gentner (1982) has argued and presented evidence that most children's early vocabularies contain more nouns than any other word type. After ruling out a number of factors in the linguistic environment – the frequency with which these different word types occur in adult language, for example – she proceeded to explain the developmental priority of nouns by means of the Natural Partitions hypothesis. This hypothesis claims that nouns are “conceptually simpler or more basic” than verbs and other predicative expressions, and thus they map onto language in a more straightforward way. In fact, in this view an action is only conceivable if there is something to undergo the action, whereas the reverse is not the case (cf. Aristotle's distinction, cited by Gentner, between first substance and second substance).

Although T learned some object labels before she learned her first nonnominal words, other recent data have not been kind to the Natural Partitions hypothesis. Briefly, it has been found that many, if not most, children learn at least some nonnominal words early in their development (see Gopnik & Meltzoff, 1987, for a review); some children begin almost exclusively with nonnominal expressions (Adamson & Tomasello, 1984; Bloom, 1973; Gopnik, 1981, 1988); in some verb-based languages children typically begin their linguistic careers with nonnominal expressions (Clancey, 1985; Gopnik & Choi, 1990); and children can be trained to learn verbs at the same early age that they can be trained to learn nouns (Tomasello & Farrar, 1986a).

It is still a fact, however, that Gentner's quantitative conclusion is true: The majority of the world's children learn more nouns than other word types early in development. The many exceptions to the rule simply show that this is not a result of any fundamental cognitive factors. Several recent studies converge to suggest that nouns predominate in the early vocabularies of most children because adults find it more interesting and salient for children to structure their early conversations around concrete objects (Bridges, 1986); adults name objects more often than they name actions when talking to young children (Gillis, 1990); and nouns are modeled for children in more salient sentence positions with more prosodic stress than are other word types (Goldfield, 1990). The priority of object labels in many children's vocabularies is thus based on pragmatic or linguistic factors, not cognitive factors.⁵

⁵ A very clear example in another domain is provided by Mervis and Bertrand (in press),

These considerations would seem to necessitate a revision or rejection of the Natural Partitions hypothesis. I vote for rejection. Aristotle himself constantly reiterated that what comes first in logic may not be first in learning. Thus, although it seems logical to Western adult scientists that an action depends on an object in a way that an object does not depend on an action, this is so only in certain kinds of ontological theories. Object concepts are simpler and more basic only in atomistic theories that posit a building up from static and simple to dynamic and complex: from objects/properties/states to relationships/actions/transformations. More wholistic and dynamically oriented theories begin from the other direction. For example, the building blocks of infant cognition in Piaget's theory (1952, 1954) are sensory–motor schemes that include both actions and objects acted upon in one dynamic and indissociable whole. In a similar vein, Nelson's (1985, 1986) theory is that children's first conceptual representations (as distinct from perceptions) are organized as event structures. These are also dynamic wholes – often reflecting larger social–cultural scripts in which the child participates (e.g., taking a bath, going in the car). In both Piaget's and Nelson's accounts, object concepts are not the building blocks; these, as well as other types of concepts, must be extracted from the temporal flow inherent in event structures and sensory–motor schemes. In this view, a transformation or relation depends for its conceptualization on an underlying object to exactly the same degree that an object depends for its conceptualization on the transformations or relations in which it participates (Nelson, 1974; Piaget, 1954).

This is not to say, of course, that object concepts and action or change of state concepts are of the same nature. While object concepts evidence the child's emerging ability to package her cognition into "permanent" entities, action and change of state concepts package processes containing a temporal dimension. We know a good bit about how children extract object concepts from event schemes (Nelson, 1982, 1985), but we know much less about action and change of state concepts. In the case of object concepts, the idea is that one slot (function) in a particular event schema can be filled by many objects (e.g., many different toys may be dunked

who studied in depth the acquisition of color names by a single child. Prior to this research many theorists believed that young children's notoriously late acquisition of color terms was due to the fact that colors are not salient concepts for young children. The child studied by Mervis and Bertrand, on the other hand, acquired the appropriate use of 11 color terms by 2 years of age, and in fact acquired almost half of these in a single 2-day period. The important point for current purposes is that this child participated regularly in a cultural script with his father in which colors played an important role (a coloring game in which familiar things were drawn in different colors) – the implication being that children's difficulty with color names is not a strictly cognitive limitation.

in the bath), and one object may fill different slots, either within the same event or in different events (e.g., a ball may participate in both the dunking game and a hiding game).⁶ These converging operations provide the “functional core” of a particular object concept: What it does and what may be done to it. Object concepts may later be recognized on the basis of static features, in this view, but passive abstraction theory – that the child forms object concepts by noticing perceptual similarities – simply will not do. As Nelson (1974) and others have so forcefully argued, traditional abstraction theory presupposes the abstracted feature that it is supposed to produce.⁷

In the case of activity and change of state concepts, Nelson has much less to say. The account of Nelson (1985) is as follows. Event structures are composed of multiple objects and activities, and relations among these. Objects are bricks in the structure, and relations (such as those indicated by *and*, *or*, *but*, *before*, *after*, etc.) are a kind of mortar that holds it together. About the class of verbs, Nelson says that it “seems to lie in between these two in that most verbs can be given a conceptual representation [i.e., like objects], but they are also essentially relational” (p. 210). In my metaphor, this means that they are like bricks in that they are elements in the structure, and they are like mortar in that they serve to relate objects to one another syntagmatically.

Insofar as verbs are elements in the structure, it might be assumed that they are formed in much the same way as object concepts: A bath script might commence with either a “splash” or “dunking a toy,” and “splashing” may also participate in other scripts (e.g., swimming, washing dishes). There are many problems with such an account, however, and Nelson does not propose it as a theory; she in fact does not deal explicitly with verb concepts at all. The most important problem is that activities do not seem to have nearly the degree of interchangeability in event schemes that objects do, and in fact, activities are often script-defining. In T's learning of the verb *sweep*, for example, there would not seem to be any event structure outside the activity of picking up a broom and sweeping with it; and any other activity with the broom would be a different event (e.g., hitting). Moreover, in T's case at least, the act of sweeping does not seem in fact to participate in other event structures. Overall, for many action concepts there is simply not the substitutability or the interchangeability in larger event structures that is characteristic of object concepts.

⁶ Piaget basically invokes the same process – the one-to-many and many-to-one mappings between particular objects and sensory-motor actions – to account for the child's attribution of “permanence” to objects across transformations.

⁷ Mervis's (1987) account in terms of form-function mappings may be a more perceptually based way of dealing with this problem.

The problem comes from how events are defined, and how function is defined. With older children, it may be that larger scriptlike structures (e.g., making cookies) are basic level events. For children just beginning to learn language, however, many events are very small and concrete things such as sweeping, throwing, giving, and falling. These early verb concepts are thus not participants in larger event structures, *they are themselves the events*, and thus they do not have functions outside of themselves. We cannot postulate, however, that the child simply notices similarities in different instances of particular events and forms a concept on the basis of these; this retains all of the problems of traditional abstraction theory that Nelson's account was designed to overcome.

The answer is that function in the case of actions means something different than it does for objects. The function of objects is what they do and what can be done to them: how they participate in events. The function of actions is *the change of state of objects they induce or result in*. There is no need for a larger encompassing script structure. My account would thus go something as follows. If T learned to say *sweep* for the event of sweeping, and only learned it for one particular broom sweeping one particular object or place, she would not form a concept; "sweeping" would remain a presymbolic form because the function is the same in all cases. (A different instrument would not change this.) A concept could be formed once she swept something different or she swept something to a new place, that is to say, once the sweeping served a different function, where function is defined as causing a different state change – either because the object is different (toys are swept up instead of dust) or because the result is different (dust is swept out the door instead of into a dustpan). In this account the function of an action is defined in terms of the object-state that the child wishes or expects to result from it. The function of an action is thus defined partly in terms of the objects involved, just as the function of an object is defined partly in terms of the actions it is involved in.

This account deals most easily with change of state verbs that have a definite end point but different objects. Thus, for example, every time a different object is "given" or a different person is "given to," the action of giving serves a different function (to give a ball rather than a book, to give a ball to Danny rather than to Maria). Early relational words such as *more* are serving different functions every time they are used to request a different food item. Almost all of the activity words involving objects are amenable to this same account: Kicking a ball is not the same function as kicking a pillow, biting a popsicle is different from biting a hand. Many of the activity verbs that do not involve objects in an activity-defining way are handled in the same way: Seeing a tree is a different function than seeing a person. The key to applying this account to activity

verbs not involving external objects at all is to recognize that they of course still result in a change of state of the actor or object involved. Such activities as running or climbing result in the actor's being in a different location – a different locative state – and even activities such as sleeping and crying result in a different state of the actor.

The main point of this modification of Nelson's theory is to account for action concepts without relying on children just "noticing similarities." Functional accounts such as Nelson's are meant to deal with this by postulating that the child forms an object category by acting on particular objects in the same way, or relating them to a function in the same way. My account is an attempt to preserve this basic point of view, while adapting the notion of function for the specific case of words designating events. Events carry with them their basic overall function, but different particular object-states make it a slightly different function in many particular instantiations – which leads to the formation of a concept. In all of these cases of course, just as in the case of object concepts, once a particular concept is formed new instances may be recognized and categorized on the basis of perceptual features alone.

Overall, there is no reason to believe that object concepts and nouns are the building blocks on which the acquisition of verbs depends. Object and action concepts are two aspects of the same conceptual reality, namely, event structures. The primacy afforded nouns in the study of early lexical development thus has no basis in the cognitive development of the child. Objects and actions are clearly two different aspects of cognition, however, and they and their associated symbols need to be studied and represented in our formalisms in ways that respect this difference.

7.3.2. Word learning in ostensive and nonostensive contexts

There is another way in which nouns and verbs are different, and, as argued previously, this may help to account for the fact that early vocabularies often have a preponderance of object labels. As argued by Talmy (1985) and Gentner (1982) and in my chapter 2, the conceptual packaging operation involved in verbs is different than it is for nouns – perhaps especially after the point at which verbs come to stand for more complex situations involving causal agents and the like. Lexical acquisition in these cases is less a matter of "picking out" a referent, as in object label acquisition, than it is of "packaging" one. It is also a complication that there is more variability across verbs in how they go about packaging than there is in the case of concrete nouns; thus, it may be that general principles for word learning may be less accessible in the case of verb learning.

Linguistic symbols are social conventions that package cognition in a way that human beings have found useful for communication. Because there is an opaque (arbitrary, noncausal) connection between form and function in most linguistic conventions, the only way they can be learned is through some type of social interaction with a mature language user. But having the prerequisite cognitive structures and observing the use of a word is not sufficient for learning its appropriate meaning. Quine (1960) made it quite clear that an ostensive definition is not, in the naked form of his classic “Gavagai” example, sufficient to explain a particular case of lexical acquisition.

In the formalist analysis of the ostensive situation the problem for the listener is that there is an infinity of hypotheses that are compatible with the speaker’s behavior; the problem is how to “constrain” them. This has led to the positing of a variety of constraints and principles (hypothesized by some to be innate) that are supposed to govern the process of lexical acquisition, for example, the Whole Object constraint (Markman, 1989), which states that in the absence of evidence to the contrary the child is to assume that the adult’s unknown word refers to a whole object. Nelson (1988) has pointed out a number of problems with this approach, not the least of which is its backward posing of the problem: From the child’s point of view, it is strange to talk about the infinite variety of hypotheses that must be constrained when it is difficult enough to come up with one good hypothesis. There are other problems with the formalist view as well, but at this point I would like to focus on how Quine’s problem is changed when social–communicative context is taken into account.

The way that formalists have posed the problem, the child, like a visitor from a foreign planet, has no clue as to what the adult is talking about. This may indeed be the case on some occasions, but on many other occasions precisely the opposite is the case – and these are the ones in which they learn language. Suppose, for example, that just preceding the native’s pointing to the passing rabbit and saying “Gavagai,” the foreigner requests (through an interpreter) to know the native’s names for colors. In this case there is a background context that makes the native’s verbal reference perfectly clear (*gavagai* means “brown”). In the absence of such an explicit context, there still could be a nonlinguistic context that makes the native’s intentions clear to some degree; for example, if the native and the foreigner are hunting together, this makes color naming very unlikely and object naming (and some other things) much more likely. In my experience visiting countries in which I do not speak the language at all, complete bafflement is a common experience. But in a train station or a market, much can be accomplished and some language understood for the simple reason that in such situations both

parties understand each other's situation and intentions perfectly well without the aid of language.

The point is that constraints of the type posed by formalists are unnecessary insofar as the child knows ahead of time what the adult intends in using a particular linguistic form. Much recent research has been aimed at discovering how young children do precisely this. Bruner (1983; see also Ninio & Bruner, 1978, and Ratner & Bruner, 1978) in particular has shown how certain contextual formats (such things as book reading or a game of peek-a-boo – analogous to the foreigner in a train station) provide the nascent language learner with a nonlinguistic scaffolding that makes the adult's intentions perfectly transparent in some cases. Tomasello and Farrar (1986b) showed that young children learn the vast majority of their early object labels in such situations (see Tomasello, 1988, for a review). In the language of the formalists, there are social-contextual constraints, and these are so powerful that in many cases no others are needed. To say the same thing in the positive direction, the social-pragmatic context supplies the child with very rich information about the adult's intentions, and these allow her to map unknown language forms onto their appropriate referents.

In the current study it is clear (and even clearer in the experimental findings of Tomasello & Kruger, in press) that, even in the earliest stages of development, the child is learning at least some of her words (I would argue all) by assimilating this wealth of social-pragmatic information. This is especially clear in the case of verbs because the child is learning many of them without a perceptual referent at all: She is learning verbs from inquiries about her intentions, from requests directed to her, and even from requests directed to others. The child knows what the adult is doing in these situations because she has learned much in her first year of life about human behavior and its reasons, and because the use of any particular new verb is accompanied by adult behavior of a particular type (the adult shoots the watergun, then holds it out to the child and asks "Do you want to *shoot* it?"), along with intonational cues about adult intentions, explicit gestures such as pointing or demonstrating, and so on and so forth. The child is using these cues to "tune in" to the adult's point of view and intentions, which is necessary for determining the features of the referent situation relevant for the verb's meaning.

I believe this same analysis holds for the acquisition of object labels in ostensive contexts. The ostensive context is a social context rich in pragmatic information as well – and this information is needed even if all the child has to do is pick out the referent the adult intends. The child observes the adult holding an object up to her, or pointing to it, or looking at it as she says a new word. It is only if the child has learned from previous experience the meaning of these social gestures that she

could possibly guess that what the adult is doing is naming an object. The ostensive context has the advantage that it is highly replicable across many objects, and thus a knowledge and use of it leads to a large noun vocabulary early in development. But it is still just another pragmatic context. It is not the only word-learning context children experience, and in fact its significance may be confined mainly to the learning of object labels (and mainly in Western culture).

Based on these considerations, I propose that children acquire words through a process called cultural learning (Tomasello et al., 1991). Cultural learning is different from social learning more broadly defined. In social learning children (and many animals) learn new things by observing the behavior of others. But in social learning the learning is from the "outside," as it were; the learner learns from others merely by having her attention drawn to things she might not otherwise have noticed and by making simple associations among these things. Cultural learning, on the other hand, takes place when the learner participates with the other intersubjectively (in a joint attentional state) and learns about a situation from her point of view – learning from the "inside," as it were. In cultural learning, this insider's perspective is based on the fact that the learner is able to conceptualize the other's intentions and, in some cases and to some degree, mental states. A succinct way of stating the difference is to say that in social learning the organism learns *from* others, whereas in cultural learning it learns *through* others.

The important form of cultural learning for current purposes is imitative learning, because it is obvious that all cultural conventions, including linguistic conventions, must be learned by imitation in some sense of the term. But this does not mean mere mimicking. In many discussions of language acquisition the term *imitation* is used to indicate the child's reproducing a form without understanding its underlying function. But whatever other important roles it may play in conversational interaction, such mimicking does not involve learning the use of new linguistic forms. Imitatively learning, on the other hand, is reproducing the behavior of another with an understanding of (or at least a hypothesis about) what the other is doing and why she is doing it. This is most clear in the case of instrumental behaviors in a goal-directed context, for example, tool use. In such cases, in order to learn imitatively from the model's behavior, the child must understand something of the causal relation between the behavior and success in the task – to open the door the key must actually be inserted and then turned, not just touched to the outside of the lock. As Bates (1979) points out, the understanding in such cases need not be total (the mechanism of the lock need not be totally understood), but if there is not some understanding

of what needs to be done, the child will be unsuccessful in her attempts to replicate the behavior and its outcome, especially in variations of the task. This is essentially the cognitive view of imitative learning espoused by Kohler (1927) and Piaget (1962).

Imitative learning may also involve behaviors that are not causal in the same way as tool use. Social-conventional behaviors such as linguistic conventions are not connected to their result or goal by causal connections. They are connected by pragmatic reasons. When the child is learning a word, she is not merely associating a sound with a percept, she is learning the reason the adult is using this word or expression in this context. This requires, in some sense, taking the perspective of the adult. Although I believe this to be true of all symbolic structures (including object labels learned in ostensive contexts), it is most clear in the case of verbs because they often concern relatively complex situations, often involving intentional states, and because they are often modeled in the absence of a percept of the referent situation. For example, when T learns to tell the dogs to "Stay" (in a variety of appropriate and novel situations) by observing adults telling the dogs to stay, she would seem to be providing evidence that she has understood a fairly complex situation: The dogs would like to go and the adults do not want them to. The acquisition of object labels also requires such understanding; it is just that it is of a simpler sort and it is very similar across many instances of object labeling.

The point is that acquiring a symbol *qua* symbol requires cultural learning. If a child does not understand the reason for the adult use of words at all, and merely mimics their form in the presence of a familiar stimulus, she is only babbling or producing a presymbolic form: a sound associated with a stimulus context. When she begins to understand why adults use language – to manipulate another person's attention or behavior in specific ways, for example – she then begins to learn imitatively and to use true linguistic symbols creatively.⁸ From that point on her attempts to understand an adult's use of a novel word takes the form of a search for the features of the situation that explain the adult's use of that particular word – what the adult is trying to do in that situation. This might be something as seemingly simple as "to point out that novel object to me" or as seemingly complex as "to get the dogs to stay in the car" (cf. Ninio, 1990). In all cases, pragmatic explanations such as these are based both on the child's general knowledge of persons and their

⁸ It is possible that some children may discover this at first on a word-by-word basis or that some children may already understand it before they begin speaking themselves. Presymbolic forms are far from a universal phenomenon.

behavior and on an assessment of how this relates to the immediate situational context.⁹

This same type of knowledge underlies the general principles that children induce about why people use words the way that they do – such things as the Principle of Reference, the Principle of Contrast, and so forth (Golinkoff et al., 1990). And it is important to remember the obvious fact that these principles are fundamentally principles of human behavior. Words themselves do not refer or contrast or exhort; people do these things with words (this is the fundamental insight of Speech Acts theory). My proposal is that all of the principles of lexical acquisition that researchers have recently proposed are, like Clark's Principle of Contrast (1988, 1990), pragmatic principles. The basic notion in the case of contrast is that when human beings behave unexpectedly there is a reason: If an adult unexpectedly calls an object "cow," that object must be different in some way from the things that the child calls "dog" (see Tomasello et al., 1988). The process is analogous to the child's searching for the reason for any surprising adult behavior. In other cases, analyses along these same lines can be constructed, even in the case of the most basic principles such as the Principle of Reference: The child must learn why the adult is making these noises while she performs some behavior in some context (and also must possess some basic perceptual or conceptual abilities, of course).

The overall point is that the process of lexical acquisition is a thoroughly pragmatic enterprise, that is to say, based on social–communicative knowledge and cultural learning skills (which are obviously dependent on conceptual development in general – one cannot imitatively learn a word to designate something that one is unable to conceptualize). Information in the linguistic context, syntactic or more general, is also a source of cues for the child in her attempts to determine why the adult is using a new word in a particular way. In all cases, children learn words by observing how other people use them and then by imitating that use.

7.4. Summary

T learned over 150 verbs before her second birthday. The conceptualizations underlying these verbs were all describable in terms of basic sensory–motor concepts known to be a part of the 1-year-old's repertoire, and most of her early verbs involved only one item acting or undergoing

⁹ Vygotsky (1962) pointed out that a new cultural form may be acquired by the child mimicking it, and only later discovering its function. This may happen, but it is surely not the predominant mode of word learning.

a transformation (or in some cases one object being acted on by T). These may be seen as general characteristics of a child basic level of verb acquisition. One subcategory of T's verbs, change of state verbs, fell quite naturally into a number of semantic domains, each of which was defined by a specific set of very basic conceptual elements involving space, time, causality, and objects. Many of the verbs within a semantic domain were very closely interdefined, sharing many of the same elements. Words for dynamic transformations were learned before static or causal versions of those same situations – a further specification of the child basic level for change of state verbs. The other subcategory of T's verbs, activity verbs, did not fall readily into semantic domains, did not seem to be closely interrelated conceptually, and did not develop from dynamic to static and causal. Child basic activity verbs are simply concrete physical or psychological actions. In terms of learning contexts, T learned many of her verbs, of both types, in nonostensive contexts.

The conceptualizations underlying nouns are static and permanent, whereas those underlying actions and changes of state are dynamic and transient. Both object and action concepts, however, emerge from the same conceptual base: larger sensory–motor and event structures that are the major form of cognitive representation during the period of early language development (Mandler, 1983; Nelson, 1985; Piaget, 1954). Object concepts are constructed on the basis of functional similarities in the roles objects play in events. Some action concepts may be formed in this same way, but, more likely, at the early stages of language development many action concepts are events, and they are categorized on the basis of functional similarities as well – functional similarities in this case meaning the object-states in which they result. Within each of these classes of concepts, it may be that there are subclasses (such as change of state and activity verbs, count and mass nouns) that profile different aspects of event structures.

Many, perhaps most, early verbs are learned in nonostensive contexts. To learn words in such contexts requires that the child be able to tune into the social–pragmatic information available in her interactions with adults and to relate this to the adult's language use – what I have called imitative learning (a form of cultural learning). The current hypothesis is that this information plays the same basic role in the acquisition of object labels in ostensive contexts, though perhaps in a slightly different way: Pragmatic information assists the child in “picking out” a referent in the case of object labels, but in “packaging” a referent in the case of verbs. Pragmatic information may manifest itself differently in the learning of other word types such as superordinate terms, property words, adverbs, and so forth, and the child may also use pragmatic information

to construct general principles of language use. In all, we do not know much about the specifics of the how children use all of the different types of information available to them in the word-learning situation, or how this might differ for different word types.

The development of T's grammar

In this chapter I summarize and discuss T's verbs from the point of view of her syntax and grammatical organization. In the first section I focus on sentences – particularly on the processes of symbolic integration that T used to combine her symbols into sentences and the syntactic devices she used to mark the different conceptual roles played by these symbols in various sentences types. In the second section I focus on T's grammatical organization, that is, on the Verb Island hypothesis. The question here is how generally T applied her syntactic devices across verbs – to what extent her early language shows evidence of lexically general syntagmatic and paradigmatic categories. In a third and final section I attempt to sketch out a more general perspective on processes of early grammatical development.

Before proceeding to specific analyses, Table 8.1 provides a very global overview of T's early sentences containing a relational word or verb, organized by sentence type and age in months. This is essentially a highly distilled composite of the tables depicting T's syntactic development in chapters 4 and 5. To accommodate an overall perspective in a small space, much important information is not included in this table, for example, precisely how syntactic marking is nonconventional in some cases. The specific analyses in the sections that follow provide much of this missing information.

Two terminological notes. In the analyses that follow I use the general argument categories actor (or agent), object (or theme or patient), location, instrument, and so forth for all verbs; these will be called *argument types*. This is not meant to prejudge the issue of whether T has such categories, but is merely used as an "etic grid" for purposes of exposition and comparison. In fact, I conclude in the end that these categories are not operative for T for most of the developmental period covered here. Also, for purposes of exposition and comparison, I use the expression *sentence type* to refer to a category of sentences employing the same argument types (sometimes called a subcategorization frame); thus all actor–verb–object sentences are considered to be of the same sentence

Table 8.1. *T's sentence patterns by argument type and age*

		<u>16 - 18 months</u>
<i>Actor</i>		
Pre:	(3)	hold, hammer, crying
<i>Object</i>		
Pre:	(6)	gone, *hold, down, stuck, *get-out, *bite
Post:	(11)	where, find, no, more, hi, bye, again, back, open, draw, catch
Both:	(2)	*get, *fall-down
<i>Location</i>		
Post:	(4)	*more, *draw, *pee-pee, *roll
		<u>18 - 20 months</u>
<i>Actor</i>		
Pre:	(16)	made, do, get, got, go, come, draw, lick, swim, sleeping, singing, waving, clapping, swinging, screaming, pee-pee
Both:	(2)	*crying, *push
<i>Object</i>		
Pre:	(8)	gone, *go-away, with-me, on, off, in, out, under
Post:	(49)	where, find, all-gone, more, hi, bye, make, again, stop, back, hold, use, buy, move, catch, bring, fix, break, brush, wash, clean, paint, hammer, lock, draw, read, cut, cook, ride, drive, bump, throw, kick, hit, touch, bite, lick, blow, play, kiss, step, pick, burn, see, look, watch, scared, try, like
Both:	(19)	*on(E), *off(E), *get, *got, *have, up, down, here, *stuck, *fall-down, *drop, *get out, open, close, broken, *eat, *drink, hurt
<i>Location</i>		
Post:	(24)	go-away, help, get(P), down(P), in, out, under, stuck(P), stay, come(P), drop, *spill, put(P), read, ride(P), *throw, *draw, *burn, play(P), walk, *swim, pee-pee(P), *swing, sit (8 W/PREPS (P); 6 NEED PREPS(*))
Both:	(2)	up, on
<i>Recipient</i>		
Post:	(3)	*give, *share, *talk
<i>Instrument</i>		
Post:	(3)	*wash, *hit, *hurt
Both:	(1)	*open
<i>2 Arguments</i>		
aVo:	(17)	make, made, did, get, got, have, buy, take, open, ride, drink, lick, look, watch, hurt, told, called
oVloc:	(7)	up, down, on, off, over, under, get-off
aVloc:	(2)	spill(P), sleeping
aVi:	(2)	*hit, *drive
Vo loc:	(8)	down, *stuck, stick(P), blow(P), *push, watch, scared(P), remember(P)
Vloc o:	(3)	*stay, *put(P), *draw
<i>3 Arguments</i>		
aVo loc:	(1)	hurt(P)
		<u>20 - 24 months</u>
<i>Actor</i>		
Pre:	(8)	made, come, work, draw, jump, swimming, pee-pee, remember
Post:	(1)	*read

Table 8.1 (cont.)

<i>Object</i>	
Pre:	(12) gone, over, here, stuck, *drop, come, fall-down, broken, cooking, *smell, hurt, hungry
Post:	(54) where, more, make, hi, bye, let-go, leave-alone(mid), finish, get, got, hold, have, give, share, use, buy, need, up, spill, bring, open, fix, tear, sweep, brush, wash, clean, hammer, cut, button, ride, eat, drink, chew, lick, play, hug, step-in, wipe, pull, lift, crying, swing, see, look, watch, listen, feel, hurt, scared, try, like, talking, remember
Both:	(3) *pick, *on, *close
<i>Location</i>	
Post:	(17) *more, on, in, over, stuck, go(P), come(P), put(P), *drop, draw(P), play(P), step-in, climb, *lay-down, stand(P), run (P), talk(P) (8 W/ PREPS; 3 NEED PREPS)
<i>Recipient</i>	
Post:	(1) got (P)
<i>Instrument</i>	
Post:	(1) hurt(P)
<i>2-Arguments</i>	
aVo:	(32) find, make, made, do, leave-alone(mid), get, got, hold, have, want, drop, spill, take, put, break, ride, hit, eat, ate, drink, swallow, lick, play, kill, wipe, push, sing, hurt, like, love, told, said
oVloc:	(14) back, down(P), on, off, in, out, under, stuck(P), stay, go(P), come(P), came-off, sit, sleep (4 w/ preps; 0 need preps)
aVloc:	(11) fall(P), *drop, take(P), get(P), draw(P), see, look, *walk, *jump, scares, talk (4 w/ preps; 3 need preps)
aVi:	(1) *hurt
Vo loc:	(22) *more, get(P), hold(P), have(P), left(P), need, move(P), spill(P), bring(P), take(P), get(P), put(P), clean, draw(P), ate, wipe(P), stick(P), rub(P), see(P), look(P), *watch, scared(P) (17 w/ preps; 2 need preps)
Vo rcp:	(2) get(P), give(P)
Vrcp o:	(1) tell
Vo i:	(5) *throw, *clean, *wipe, crack(P), cover(P)
Va o:	(1) *cover
Vo a:	(1) *touch
Vloc o:	(2) *come, *get-down
<i>3-Arguments</i>	
aVrcp o:	(3) help(P), gave*, told
aVo loc:	(7) *take, put(P), cover, *drink, jump, push, see
oVi loc:	(1) hurt
aVo rcp:	(2) give(P), gave(P)*

Note: Ignores expanded noun phrases and complex sentences. Asterisks denote missing or incorrect obligatory marking (word order or prepositions) on some occasions. Verbs with no asterisk used correct marking (with "P" denoting prepositional marking). "Pre" designates position before the verb; "post" designates position after the verb; "both" designates variable position. "a" designates actor; "o" designates object; "loc" designates location; "i" designates instrument "rcp" designates recipient.

type, even though, as stressed previously, each is individual with respect to the particular conceptual structures involved.

8.1. Constructing sentences: Symbolic integration and syntactic devices

In this section on T's early sentences, I look first at her word combinations and sentences produced prior to 18 months – all two-word (one-argument) sentences – and then at her longer and more complex sentences produced during the 18- to 24-month period. In both of these subsections the focus is on how T constructs these larger symbolic structures cognitively via processes of symbolic integration, and whether and in what ways she uses syntactic devices such as word order and prepositional marking to indicate syntagmatic relations among their linguistic elements.

8.1.1. Two-word combinations prior to 18 months

During the 16- to 18-month period, T used approximately 45 different verbs and relational words. As can be seen in Table 8.1, she combined 23 of them with other words, mostly object labels.¹ Nineteen of her verbs were combined with the object of an action or transformation only. T's ordering was consistently adultlike for 12 of these, but consistently non-adultlike or inconsistent for 7 others (e.g., "Cookie bite" when she wants to bite the cookie, or "Fall-down man" and "Ball fall-down" for essentially the same situation). In three sentence types T indicated the actor, always in the preverbal position. In four types she indicated the location of an action in the postverbal position, without the appropriate prepositional marking in any case (e.g., "Pee-pee nightgown"). T used only three of her verbs with two different argument types (those appear twice in Table 8.1). Two of these (*draw* and *more*) expressed location and object/theme in the postverbal position on different occasions; these were not differentially marked (e.g., "More juice" and "More mouth"). The other (*hold*) expressed actor in the preverbal position on one occasion and object in both preverbal and postverbal positions on other occasions. T also produced during this period a number of sentences without verbs. None of these had any syntactic marking, with the exception of object-object constructions indicating possession, which were marked either with intonation, the possessive 's, or both.

The sentences T produced during this early period thus show her

¹ (Of her first 155 two-word combinations using verbs or relational words, only 2 did not contain an object label or a person's name, and those contained modifiers used as object names, e.g., "Bye pretty.")

great facility for creating novel linguistic structures by concatenating words. But, with the one exception of possession, concatenation is all that this is. First and most clearly, T showed absolutely no prepositional marking of her locatives, which would have been required in adult language in the majority of cases. Second is the vexing question of word order. For many of her verbs, T's positioning of actor or object in her two-word combinations was nonadultlike or inconsistent. Her three verbs expressing agents all did so in the preverbal position, but for at least one of these T also on occasion placed the object in the preverbal position. Although the majority of her object arguments were in the postverbal position, she also placed locations in exactly the same position with no differential marking of any kind, and on several occasions put objects in preverbal positions. It is true, on the other hand, that for a number of her verbs T did show some consistent ordering patterns conforming to Braine's (1976) definition of "positionally productive patterns," for example, the "pivot-look" of *more*, *get-it*, and *gone*. But none of these was productive if what is meant by productive is contrastive use. In no case during this early period did T use one order of words to mean one thing and another order to mean another thing.

The current hypothesis is that the ordering consistencies observed in T's earliest word combinations reflect nothing more or less than an ordering preference following adult models. The theoretical issue is whether patterns in the child's behavior that the researcher is able to discern are the same thing as patterns the child controls intentionally and uses in her construction of linguistic messages. I think not. Word-order preferences may reflect nothing more than the child's tendency to mimic adult word order initially and to stick with an ordering once it has been established, at least until contrary data are observed. In my view, at this early date T attached no more – and no less – significance to the order of words than to other consistent orderings of parental actions (e.g., the fruit goes on the cereal before the milk), which she also copied.

From the point of view of Cognitive Linguistics, constructing a sentence is an act performed by a particular person speaking a particular language on a particular occasion for a particular purpose. The mental operations involved in this process are the same as those used in other domains of creative cognitive activity, although the material worked with – the structures and categories involved – are obviously unique to language. The mental operations used in sentence construction are referred to as processes of symbolic integration.

We may represent the structure underlying any one of T's sentences by applying, and slightly extending, the methods of formal analysis explicated in chapters 3 and 4. For these early combinations, the only

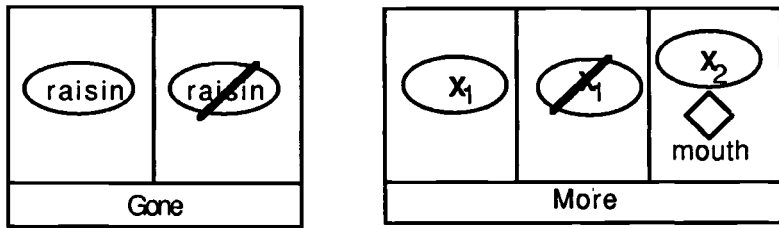


Figure 8.1. Sample representations for T's two-word combinations.

integration involved is the specifying of the object undergoing the transformation or being affected by the activity (see Figure 8.1). Thus, “Raisins gone” is simply the formal diagram proposed for *gone* in chapter 4, with the word *raisins* in the place of the variable *O* (which was intended to represent T's usage for a variety of objects). (Because the internal structure of activity verbs was not formally represented in previous analyses, I have chosen not to depict them in Figures 8.1 or 8.2.) Actions taking place at a location (e.g., “More mouth”) are indicated by using the locative diamond, with particular locative relations being indicated only if T does so linguistically (thus, if T later says “More in mouth” the diamond would contain the word *in*). Figure 8.1 provides diagrams for two of T's earliest two-word change of state combinations; diagrams such as these could theoretically be provided for each and every one of her sentences.

The symbolic integration process by which T constructed these two-word combinations is simple. She constructed them with the same “mental combinations” that Piaget (1952) describes as characteristic of the sixth stage of sensory–motor development – two schemes are combined mentally before the child acts overtly. Thus, to indicate to someone that the raisins are gone – that is, a conceptual situation of the form depicted in Figure 8.1 – T simply selects from her inventory of symbols the one representing *raisins* (built up independently in the past through a variety of naming and requesting situations) and the one representing *gone*, and integrates their conceptualizations (raisins are the thing that is gone). She then says them together. This is done as a single act, within a single intonation contour, which indicates their fusion into a single combinatorial form indicating a single conceptual situation. This is presumably the same process she follows in producing such object–object constructions as “Bottle rabbit,” only in this case the words she chooses (perhaps because she has no alternatives) are more loosely related conceptually, which makes it more difficult for the listener to reconstruct the intended conceptual situation.

I thus conclude that the vast majority of T's two-word combinations during the 16- to 18-month period were pregrammatical (cf. also Hill, 1986; Peters, 1986). She has learned how to combine concepts but she has not – with the interesting exception of the possessive, which is clearly productive by 18 months – learned how to mark for her interlocutor the relation between them that she intends. In most cases, T's interlocutor is able to reconstruct the intended relation from the surrounding context, but this does not obviate the fact that T herself does not control any devices for indicating different argument relations. This general conclusion accords with Atkinson's (1985) statement based on his survey of the data on early child grammar: "The basic predicate–argument form of expressions can appear on the basis of a maturing conceptual system and does not necessarily imply a significant level of linguistic representation. . . . [It is possible] that the early stages of word combination are not syntactic in any interesting sense" (pp. 308, 301).

8.1.2. Sentences with three or more words, 18 to 24 months

During the 18- to 24-month period T begins constructing longer sentences, with two and sometimes even three arguments, and she begins using word order and prepositional marking as productive syntactic devices (see Table 8.1). With regard to actor and object, T's sentences of the " _____ made this/that _____ " variety were the earliest and most numerous cases in which both actor and object were present in the same sentence; these were always ordered in the adult fashion. Other verbs serving to structure similar sentences during the early part of this period were *ride, have, hurt, told, take, lick, love*, and a few others; these also used adultlike ordering (see Table 8.1). Thus, although many other verbs were not involved in sentences of this type, it would seem that for these verbs, at least, T did use some type of contrastive word order marking to indicate the difference between actors and objects. T's marking of locations, instruments, and recipients during this period is inconsistent, as can be clearly seen in Table 8.1; but with some verbs her marking of these argument roles was reasonably consistent, especially after 20 months.

The method for formally representing the conceptual situations underlying these more complex sentences is the same as before, only now I add in any formal marking that T uses productively. I mark the elements in the diagrams in a way analogous to the way T marks them, with numbers representing the order in which words are said and prepositional markers explicitly indicated. Figure 8.2 presents a random assortment of some of the more complex of T's sentences with change of state verbs during the later parts of the study. As with her two-word

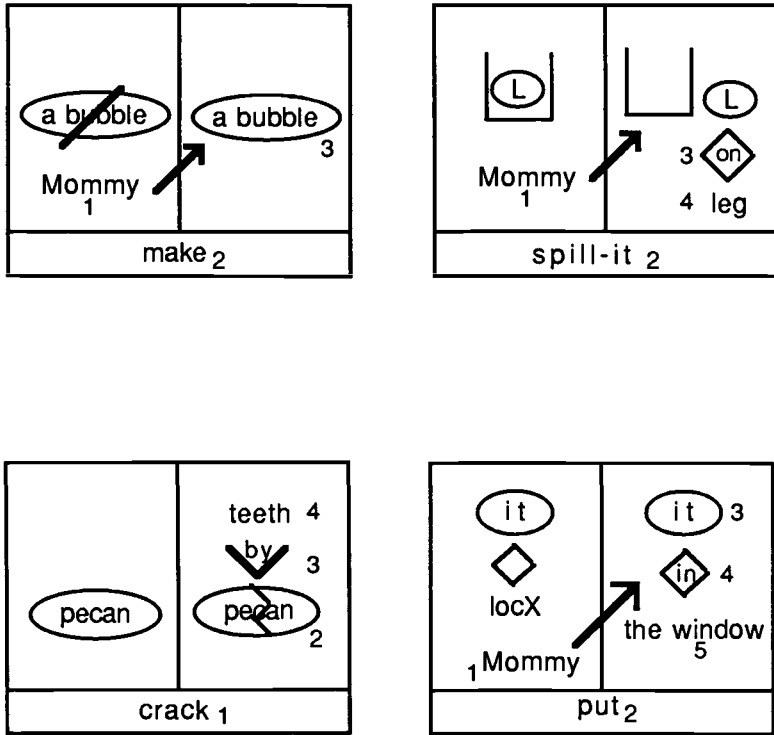


Figure 8.2. Sample representations of T's longer sentences. See text for explanation of marking.

combinations, much of what T is doing in these complex sentences is verbally expressing aspects of the conceptual situation that were already implicit in her less complex sentences with these verbs. In other cases, however, she is adding information by appending such things as locatives and instruments that are outside the “core” conceptual situation of the verb by itself.

Processes of symbolic integration are clearly more complex in these more complex sentences. To study more closely processes of symbolic integration beyond the two-word stage, I have listed (or otherwise accounted for) in Table 8.2 each and every one of T's first 271 recorded three-or-more-word sentences from their inception late in the 18th month until well into the 20th month (20.08). It is necessary to stop listing at this point because selection becomes a problem, that is, the number of diary entries at this point begins dropping precipitously and thus it is unclear if the absence of a certain type of sentence is because T did not produce it or because it was not recorded.

Table 8.2. *All T's sentences of more than two words (not counting schwas) from their origins until diary selection criteria become a problem*

Age	Utterance	Previous paradigm	Expansion	Addition	Coordination
18.24	Lock that Lulu	Lock-it	dem		
18.29	Maria made this duck (13)	__made		obj + dem	
18.30	Stuck this W-pillow (1)	Stuck__	dem		
	Cereal down rug (5)	__down. Down__			obj + loc
	Read this book (3)	Read__	dem		
	Read this book outside	Read__		loc	
	See Daddy's car (1)	See__ . Daddy's__	poss		
	Bye Daddy's car	Bye__ . Daddy's__	poss		
	Close this window (1)	Close__	dem		
	Ride this Mommy (2)	Ride__	dem		
19.01	Two rugs down	Two__ . __down.	mod		
	Step-in this pen (10)	Step-in__	dem		
	Hold this ball (7)	Hold__	dem		
19.02	Bite this pigtales (3)	Bite__	dem		
	See the picture tiger	See the__ . Picture__	mod		
19.03	Break this bite	Break-it	dem		
	Move Daddy tray (1)	Move__ . Daddy__	poss		
	Open this cracker (5)	Open__	dem		
19.04	Stuck this Daddy	Stuck__	dem		
	Stuck on bowl	Stuck__ . __on			V+RW(reord)
19.05	Big rock stuck	Big__ . __stuck	mod		
	Danny hit tennis	Hit__		act	
	Chicken off hands (13)	__off		loc	
19.07	Daddy drive keys	Driving obj		act + loc	
	Stop-it Maria water	Stop-it__		obj	
	Doo-doo fork eat-it	__eat-it		instr	
19.08	Big-Bird ride horsie (2)	Ride__		act	
19.11	Weezer did it	Do-it		act	
	Play this silk (2)	Play		instr	
19.15	Down on couch	Down__ . On__			V+RW
	Stay here rug (1)	Stay		loc + obj	
19.16	Put-it on ring	Put-it__ . On__			V+RW
	Down this right-here	Down__		obj	
	Draw me man	Draw__ . Draw__			obj+loc
	Poker under car (1)	Under__		obj	
19.18	Sit-down this bed	Sit-down__	dem		
	Fall-down Maria's bike	F-down__ . Maria's__	poss		
	Read this book again	Read this__		(adv)	
19.20	Here this pen (2)	Here__	dem		
	Draw this door (1)	Draw__	dem		
	Me ride this horsie	__ride__	dem		
19.21	Bug on monkey bars (14)	__on. On__			obj+loc
	Burn this fire	??			
	Nini on this	Nini__ . On__			V + RW
	Daddy have this wallet (4)	Have-it__	dem	act	
	Put-it in there (2)	Put-it in.		loc	
19.22	Bugs in there (8)	__in. Put in there.			obj + loc
	Swing this monkey bars	Swing__	dem		
	Little stickers up-here	Little__ . __up-here	mod		
	Cinnamon lick-it hands (1)	Lick-it__		act	
	Bump this car	??			
	Down here grass (1)	Down__		loc	

Table 8.2 (cont.)

Age	Utterance	Previous paradigm	Expansion	Addition	Coordination
	This ball under here	__under__	dem		
	Here the more crayons	Here the__. More__			V + RW
	Daddy open this top	Open this__.		act	
19.23	Pillow down here (3)	__down. Down__			obj + loc
	Walking here funny	??			
	Mommy spill-it on leg	Spill-it__. On__		act	V + RW
	Maria's shirt on there	Maria's__. __on__	poss		
	Blow on this here	Blow__. On__		loc	V + RW
	Ride in here	Ride__. In __			V + RW
	Pete hurt the fingers in there(2)	Hurt__. In__		act	V + RW
19.24	Bite the banana Popsicle	Bite__	mod		
	Linda have-it more cream	__have__. More__			V + RW
19.25	Maria get-off there (address?)	Get-off		act + loc	
	Pee-pee in this room	Pee-pee__. In__			V + RW
19.26	Play on monkey bars	Play__. On__			V + RW
	Maria hit me	__hit. Hit__			act + obj
	Get-it on steps	Get-it obj__. On__		loc	
	Scared man on TV (1)	Scared__. On__		loc	
	vMaria told me have one too (5)	?? (Have one too)			
	vDraw picture cat	Draw__. Picture__	mod		
	vMaria made this two cats	__made__. Two__	mod		
	aWeezer up-here tree	__up-here. Up-here__			obj + loc
	aMaria sleeping right-here	__sleeping		act	
19.27	Stop push me	Stop__. Push me.			V + V
	Dana called me Lauren	??			
19.28	Weezer drinking the eggs	Drinking__		act	
	Daddy take the bottle (4)	??			
	Danny got me	Got-it__		act	
19.29	Fall-down here ground	Fall-down__		loc	
	Mommy get sauce (1)	Get-it__		act	
	Buy this sponge (1)	??			
	Here this Daddy's hat	Here this__	poss		
19.30	Put on Mommy's shirt	Put on__. Mommy's__	poss		
	Watch me doors open	Watch__. __open			V + V
	B-cake come-in too	__come-in. Come-in too		(adv)	
	Watch TV inside (1)	Watch__		loc	
	Daddy buy this	Buy__		act	
	Push me leg	Push me		loc	
	Daddy pee-pee too	Pee-pee__		act + (adv)	
20.00	Get some music	Get__	mod		
	New picture gone	New__. __gone	mod		
	Open this one too	Open__		(adv)	
	Open this one now (1)	Open__		(adv)	
	Watch TV now	Watch__		(adv)	
20.01	Watch squares on there	Watch__		loc	
	Marshmallow stuck on there	__stuck. Stuck on__			obj + loc
	Share this pen	Share__		obj	
	Clean this paper-towel	Clean__		instr	
	Help this water	Help__	dem		
	Make this house	Make__	dem		
	Watch this program	Watch__	dem		
	Run in street	??			
	"B" in there tennis	__in there		loc	
	Hold this Maria's necklace	Hold__. Maria's__	poss		

Table 8.2 (cont.)

Age	Utterance	Previous paradigm	Expansion	Addition	Coordination
20.03	Cookie Monster love cookies (1)	??			
	In Maria's car	In __, Maria's __	poss		
	Throw bottle hands	Throw __		instr	
	Eat-it all up i-c-sandwich	Eat-it __		(adv)	
	Daddy take to Maria's	__take obj		loc	
	Push down horsie now	Push __. Push down		(adv)	obj + loc
	Push horse down (1)	Push down horsie now			(record)
	Try this leaves	Try __	dem		
	Pick Linda leaves	Pick __, Linda __	poss		
	Pete go with-me g-man	__go. With-me __			V + RW
20.04	B-rabbit playing music	Play __		act	
	Look Weezer climbing a tree	Look at __, Climbing __			V + S
	Look at girl drinking a Kool-aid	Look at __, Drinking __			V + S
	I-c-sandwich gone a bowl	__gone		loc	
20.05	Funny man gone	__gone	mod		
	Swinging the new pajamas	Swing __	mod		
	Star back here	Back obj		loc	(record)
20.06	Come-on Mommy shirt off	Come-on. __off.			V + S
	Clean this grass (4)	Clean __	dem		
	Maria's umbrella here	__here	poss		
	Clean this up-here	Clean obj		loc	
	Clean this tiny tent	Clean __	mod		
	Daddy singing chicken	__singing		obj	
20.07	Like Weezer kitties	Like __, Weezer __.		poss	
	Pete feel better now	??			
	Pete hurt a car	__hurt obj		instr	
	Pete hurt a car street	__hurt __		loc	
	Daddy put new pajamas on	Put __on. New __.	mod	act	
20.08	Get down this book	Get __. Down __			V + RW
	Hold this wallet now	Hold __.		(adv)	
	Open this top shelf	Open __	mod		
	Peoples on there boat	__on __		loc	
	Draw star on me	Draw __. On __			V + RW
	More jelly toast	More __. More __			obj + loc
	Up-here this fork	Up-here __	dem		
	Wash the other ear	Wash __	mod		

Note: Only sentences with verbs are included. Each sentence is hypothesized to derive from a "Previous Paradigm" sentence(s) containing that same verb in combination with one of the mental operations "Expansion," "Addition," or "Coordination." Numbers in parentheses indicate other sentences during this same period of the same form (i.e., only difference is object label or proform). In the expansion column, "dem" indicates a demonstrative adjective; "mod" indicates a modifier; "poss" indicates a possessive. In the other two columns argument types are abbreviated (e.g., "act" is actor, etc.); "V" indicates another verb and "RW" indicates a relational word such as a preposition (which may have been previously used as a verb).

There are three exceptions to this exhaustive listing. One involves sentences involving no verbs or relational words (e.g., “Funny little rock,” “Daddy heavy shoes”). These were not especially productive, and not a great number of them were recorded. A second is three-word sentences involving only a definite or indefinite article or a schwa as the third word; these were recorded inconsistently throughout the diary. At different times T’s parents recorded such things as *Whereda*, *Where-da*, *Where-the*, *Where the*, and so forth, without any clear rationale; the status of this “filler” material is thus unclear and so I have basically ignored it (although it is clearly important; see Peters, 1983). T’s use of *this* and *that* in similar sentential contexts is much clearer and was apparently recorded faithfully and consistently; I have thus counted these as words. The third exception is repeated instances of exactly the same sentence with the substitution of object labels or proforms only. Thus, in addition to “Close this window,” T also produced during this period “Close this door.” The number of such repetitions (only during this same month and a half period) for each sentence is in parentheses next to the first instance (thus, “Close this window” had only “Close this door” as a repetition and thus the number “1” is beside it). Table 8.2 thus lists 142 sentences and counts as repetitions 129 others – for a total of 271.

Using these 271 sentences as a database, I would now like to look more closely at the processes of symbolic integration T used to construct these sentences. Something along the lines of the mental combinations invoked for two-word sentences is once again at work in many cases, only in this case the elements put together are sometimes larger and have preexisting internal complexity of their own. To help determine more precisely the nature of these elements and the integration operations involved, each sentence listed in Table 8.2 has associated with it two additional pieces of information. In the first column I have listed the sentence or sentences that T had previously produced that seem to be most closely related. Thus, T had previously said “Ride horsie” and “Ride car” (indicated together as “Ride _____”) before she expanded the material in the object slot with “Ride this Mommy” (18.30). In the case where there are two relevant paradigms present in T’s previous language, both are reported. This includes both modifier–modified, as in the possessive “See Daddy’s car” for which “See _____” and “Daddy’s _____” are previous paradigms, as well as the combination of two relational terms, as in “Down on couch” for which I list both the “Down _____” and “On _____” paradigms. In cases where T produces a sentence with a verb for which there is no record of previous combinatorial usage, question marks are placed in the “previous paradigm” column.

The other piece of information is the integration operation or operations that would be required to go from the previous paradigm to the

sentence in question. Thus, moving from "Read paper" to "Read this book" involves the *expansion* of the object argument from an object label to "this Mommy" (a demonstrative noun phrase) for the simple object labels that previously had occupied the slot. "Read this book outside" represents the *addition* of a locative term ("outside") to the just constituted "Read this book." There are two kinds of *coordination*. The first is called single-verb coordination and occurs when the same relational term or verb that had previously been used in two two-word combination types (i.e., involving different argument types) now serves to structure a single sentence involving both of these argument types. For example, "Cereal down rug" is conceived as a coordination of "_____ down" combinations (where the slot is the theme, as in "Kitty down") and "Down _____" combinations (where the slot is a location, as in "Down chair").² The second is called two-verb coordination, involving paradigms from two independently productive relational terms. For example, "Put-it on ring" is conceived as a coordination of "Put-it _____" combinations (where the slot is a location) and "On _____" combinations (where the slot is an object serving as a location, as in "On head").

The lines between these different operations is subtle in some cases and I do not wish to make an issue of them. For example, I have classified such sentences as "See Daddy's car" (deriving from a "See _____" paradigm and a "Daddy's _____" paradigm) as expansions because there is only one relational term (*see*) involved, whereas "Stuck on bowl" is coordination because there are two relational terms. Obviously an argument could be made that the possessive "Daddy's car" is also relational and the "See Daddy's car" should be a coordination, or alternatively that "on bowl" is not a true verb and thus "Stuck on bowl" should be an expansion. For current purposes such choices are not crucial, so I will not defend them here.

What is important for current purposes is the way T composed her more complex sentences using material she had previously used in less complex sentences. T's first clear three-word utterance was "Lock that Lulu" (18.24), which was her first sentence of any type with that verb. Her second was "Maria made this duck" (18.29), which involved her first use of an object with this verb, and that object was a demonstrative in combination with an object label. After these initial 2 utterances, sentences differing by more than one operation from previous sentences with the same verb are rare. During the 20 days following these 2 productions, each of T's 73 sentences except 2 (and possibly 3) differs from previous sentences with that verb by only a single simple operation.

² Note that the "previous paradigms" always involve the same argument type as the corresponding three-word sentence unless otherwise noted.

Roughly half of these 73 were exact repetitions of established forms (differing only in object labels) and thus appear in the table only as numbers in parentheses. The new forms involve expansions most often (21 instances), additions a bit less often (13 instances), and coordinations less frequently still (5 instances). One clear exception to the “single operation change” pattern is “Daddy drive keys” (19.07). T had never before used either an actor or an instrument with *drive* (only an object). The second exception was “Stay here rug” (19.15). *Stay* had been used previously as a single-word request only and thus the addition of both a theme and a location represents two additions. The one other possible complex change is “Stuck on bowl” (19.04). T had previously used “Stuck _____” combinations and combinations with *on*; but these latter combinations were in a different order – of the “Cake on” variety. This sentence thus represents a coordination and a reordering; it is one of only three reorderings in all 271 sentences during the month and a half period.

In the 5 days following this initial 20 days, T produced 46 sentences of three or more words (21 are repetitions and there are roughly equal numbers of the other three operation types). Three of these involve verbs that have never been used before in any context: “Burn this fire” (19.21), “Bump this car” (19.22), and “Walking here funny” (19.23). There are 5 other sentences involving more than one change from previous sentences with the same verb. Four of them involve adding an actor while also expanding the object (or coordinating with another relational term) – for example, “Daddy have this wallet” could be related only to previous sentences of the “Have-it _____” form. The fifth involves coordinating with a prepositional phrase while expanding it for the first time, that is, “Blow on this here” was the first coordination of *blow* with more than an object label and it is the first use of the demonstrative in *on* phrases.

During the final two weeks of this month and a half period T produces 150 three-or-more-word sentences. Roughly half are repetitions and there are approximately equal numbers of the three types of operation. Seven of these are sentences with no previous precedents for that verb. Two of these simply involve the verb and a object: “Buy this sponge” (19.29) and “Run in the street” (20.02). The 5 others, however, all involve full actor–object sentences upon first use of the verb, for example, “Daddy take the bottle” (19.28). There are no sentences during this period that add more than one new element, with the exception of one sentence with *pee-pee* adding both an argument and an adverb.

Overall, then, for the entire 271 three-or-more-word sentences during the month and a half period, the numbers are: 129 repetitions of previously used forms (differing only in the object labels involved), 121

Table 8.3. Frequency of different types of sentence construction operations during 18.24 to 20.08 period (those from Table 8.2)

Type	Frequency	Proportion
Substitution of object label only	129	.48
Expansion (modification) of object label	48	.18
Addition of one argument (or adverb)	47	.17
Addition of two arguments (or 1 argument + adverb, demonstrative, or reordering) *	7	.03
Coordination (Single-verb)	10	.04
Coordination (Two-verb)	16	.06
Coordination + add or reorder *	4	.01
No previous use of verb in sentence *	10	.04
Total	271	1.00

Note: Asterisks denote sentence types that involve more than one operation (a total of .08).

sentences involving one small change from previous sentences with the same verb (adding or expanding an argument, coordinating two previously used paradigms), 11 sentences with more than one change from previous sentences with that verb (7 add two arguments, 4 coordinate plus add one argument) and 10 sentences that represent the very first use of that verb (5 one-argument and 5 two-argument). This means that roughly 92% of T's first 271 three-or-more-word sentences involved only a single simple change from previous sentences with that same verb. This percentage is undoubtedly an underestimate as exact repetitions of the same sentence were not recorded in the diary, nor were less sophisticated sentences once a verb had gone on to be used in more sophisticated sentences (thus, there might have been more instances of "Ride this _____" sentences produced after T had started with "_____ ride _____" sentences, and these would probably not have been recorded).

Table 8.3 presents a quantitative summary of the types of integration operations that T would have had to use to get from the previous paradigms in her own speech to her first three-or-more-word sentences. Note that this assumes that T is proceeding from her own *productive*

system – in Elber's (1990a) felicitous phrase, "learning language by producing language." These data support the view that T's three-or-more-word sentences are almost all constructed by her taking from her own productive inventory two structures (each of which may already have some schematicity or complexity) and combining them. Except in the case of object label substitutions, at least one of these already has internal complexity (more than one word) or else is constructed as a suboperation of the overall sentence construction operation. Thus, T may substitute into one of her argument slots a modified object label (what I called expansion), demonstrating for the first time the ability to fill argument slots with complex material. She may add a new argument or, in a few cases, arguments. Or she may combine two paradigms each with its own already productive relational word or verb: either two paradigms involving the same verb (the verb thus serving as a "valence bridge"; MacWhinney, 1989), or two paradigms involving two different verbs or relational words.

It is important to emphasize at this point one other characteristic of T's symbolic integration operations as evidenced in these analyses. In almost all cases, the ordering within the two constituents (e.g., *see* _____ and *Daddy's* _____) is preserved. There are only 3 exceptions in T's first 271 three-or-more-word sentences. This would seem to indicate that what T is doing at the highest level is concatenating symbolic structures in a very straightforward way via mental combinations. It is just that as language development proceeds the symbolic units being combined have their own internal complexity. Elbers (1990b) also finds the preservation of order within constituents in her subject's three-or-more-word sentences, and she has called this basic strategy "expansion-by-conservation." I should also emphasize that overall Elbers found a developmental pattern very similar to T's for her Dutch-speaking subject, that is, mostly incremental changes in the production of sentence types. The fact that Dutch differs from English in many important ways (it is a verb-final language, e.g.) argues for the generality of these symbolic integration operations across languages.

A note about adult models. It must be emphasized that, in the current cognitive perspective, the adult model is only a contributor to the child's linguistic system if she actively attends to and comprehends that model, thus using essentially the same cognitive operations she would have used to produce it herself. That is to say, to learn to express the actor of *ride* from an adult model the child must comprehend a sentence such as "Grover ride horsie" in the sense that she reconstructs the role that Grover is playing vis-à-vis *ride* in the adult's sentence.³ The fact that T

³ This is obviously very different from the notion that some innate structure is "triggered"

is able to do this on some occasions is evidenced by the fact that five of her productive sentence types emerged full-blown with two arguments and no previous paradigms with that verb.

During the 3 months following the period just analyzed (i.e., the period from 20.08 to 23 months) T's sentences become more complex in a number of ways. As noted previously, the problem is that the criteria for recording changed along with these developments and so the type of analysis just conducted would not be enlightening; we would never know whether to attribute lack of precedents to T's language or to gaps of recording. Even so, an informal inspection of the recorded sentences during this period reveals that the vast majority of T's sentences are still only small variations on previous sentences with the same verb. There are, however, a number of lengthy sentences with no recorded precedents.

Overall, then, it is clear that during the 18- to 24-month period, T begins constructing more complex sentences using a variety of symbolic integration operations. In many cases – as shown in Tables 8.1 and 8.2 and as I have argued – she also marks the elements in these larger structures with the syntactic devices conventional to speakers of English. The question now becomes the generality of the marking, that is, whether T is operating with verb-specific or verb-general syntagmatic and paradigmatic categories.

8.2. Constructing a grammar: The Verb Island hypothesis

Clearly T's three-or-more-word sentences are grammatical in a way that her two-word combinations are not. Many of her verbs are used with more than one argument (up to three), and argument roles in many sentences are clearly marked with either word order or the appropriate preposition. My hypothesis is that this grammaticalization derives, for the most part, from T's learning about the combinatorial possibilities, and the marking of these, for each verb individually: the Verb Island hypothesis. On this hypothesis, we should expect to see T using different combinations of argument structures (sentence types) with each of her verbs and different syntactic marking patterns for the same argument type across verbs (e.g., instrument marked for one verb but not for another at the same developmental period).

A competing hypothesis is that the grammaticalization apparent from T's 19th or 20th month may derive from her ability to generalize or analogize patterns from one verb to another, or from whole classes of

in the child after exposure to a linguistic structure, regardless of whether that structure is actively processed (cf., e.g., Lightfoot, 1989).

verbs to others or across the whole class of verbs. Related to this is the possibility that T has argument categories (agent, instrument, etc.) that may be applied across all of her verbs for which they are cognitively or linguistically relevant. If this more generous account is true, we of course should expect to see much greater uniformity in the grammatical patterns characteristic of T's different verbs, and we should expect to see many complex sentence patterns used with verbs on their first use in the absence of adult models for these patterns. If this hypothesis is true, we will have to conclude that T's grammatical competence – in the sense that she is building a system with abstract classes – is substantially greater than is assumed by the Verb Island hypothesis.

Obviously (and unfortunately), we are hampered in our comparisons of these alternatives because the current data do not contain systematic information on adult models and, as noted, the selection criteria for the diary pose a problem from the middle of the 20th month on (in the sense that it is impossible to determine novelty). Nevertheless, we may look at various aspects of the current data with these hypotheses in mind and hopefully make some progress on this question. I first look at the consistency of T's sentence frames across verbs (section 8.2.1), and then at the consistency of T's syntactic marking of arguments across verbs (section 8.2.2). I next look at the status of T's grammatical categories (section 8.2.3), and finally at a few other grammatical phenomena that may provide other evidence of systematicity (section 8.2.4). In the final subsection I provide an overall assessment of T's early language vis-à-vis the Verb Island hypothesis.

8.2.1. Consistency in sentence frames across verbs

A major line of evidence for systematicity would be consistency among the sentence patterns T expressed with different verbs. For example, if as soon as T used her first sentence expressing both actor and object she then immediately produced similar sentences with her other verbs (ideally in the absence of adult models), this could be adduced as evidence that her verbs are in a single class (or, alternatively, that her arguments are verb-general categories). The problem with using production data for such an analysis is that T may use different sentence patterns with different verbs because she uses them in different pragmatic contexts. Thus, in many cases T does not express the actor in sentences with transitive verbs quite simply because she only uses them in contexts of requesting – in which case the actor is not supposed to be expressed in English. Nevertheless, we can still take a general view of the consistency of T's sentence patterns across verbs to see if general sentence patterns

Table 8.4. Number of verbs of each semantic category following different developmental pattern (as determined by the arguments expressed)

	Change of state	Activity	Total
Holophrase	8	4	12
Change function	22	-	22
1 argument throughout	17	39	56
Object --> 2 arguments	18	15	33
Actor --> 2 arguments	2	7	9
Others --> 2 arguments	5	8	13
Multi-argument throughout	6	11	17

might give evidence for some form of general categories transcending the individual verbs involved.

Tables 8.4 and 8.5 display some basic developmental patterns of T's sentence construction in terms of the number and complexity of the sentence frames in which her verbs appear. Table 8.4 reports the number of verbs following each of several developmental patterns of sentence construction. The most striking datum in this table is the fact that 90 of T's 162 verbs and relational words never once in the course of the study served to structure multiargument sentences. Twelve were used as holophrases only (slightly over half of these were performatives such as *thanks*, *hush*, and *sorry*). Twenty-two relational words (all changes of state) changed functions during the course of the study to prepositions or adverbs, for example, *more*, *back*, *on*, *out*, *again*. Fifty-six verbs (39 activities) participated only in sentences with no more than one argument expressed (e.g., "Brush hair," "Sweep Weezer"). Of the 72 verbs that do eventually structure more complex sentences, approximately half began as one-argument verbs expressing a theme/object, one-quarter began as one-argument verbs expressing either an actor or some other argument type (mostly location), and one-quarter were the verb for multiargument sentences in their very first uses late in T's 2nd year.

Table 8.5. *Number of verbs employing different numbers of sentence frames*

	16 - 18 months	18 - 20 months	20 - 24 months
One sentence frame	20	61	59
Two sentence frames	3	29	31
Three sentence frames	-	11	18
Four sentence frames	-	7	11
Five sentence frames	-	-	11

These patterns make it clear that individual verbs followed different paths in their development during T's 2nd year, but they do not make it clear why. It is important to point out in this regard that if the selection criteria for the diary were followed faithfully – which I believe they were until at least 22 months (although quantity was a problem for the last month and a half of this period) – this table should not be any different than if we had a record of every one of T's utterances during this period. New verbs, no matter their syntactic contexts, were recorded immediately upon first use, and all uses with new arguments were supposed to be recorded. All that is supposed to be missing are repeated uses of already used sentence frames. The question thus arises why some of T's verbs never built up to sentences with more than one argument. Only around one-quarter of these were adult intransitives not requiring more than one argument. Some of the others were used by T exclusively as either requests to others or as comments on her own activity – both of which discourage linguistic expansions – but many clearly were not pragmatically constrained in this way. I have no way of estimating if there is some sense in which appropriate situations simply did not arise for these verbs, but some evidence is provided by analysis of the videotapes (see subsequent discussion).

Table 8.5 takes a different angle on T's syntactic development. This table shows the number of sentence frames in which each of her verbs participated during the different developmental periods of the study – a measure of “flexibility” or “adaptability to different contexts” as it were. A sentence frame is defined as any difference in argument types (thus

"Draw paper" is different from "Draw pencil"). Even more clearly than the previous table, these patterns make clear the individual paths followed by the different verbs. During the first months of her combinatorial prowess (16–18 months), T uses the vast majority of her verbs in one and only one way. In the 18- to 20-month period she becomes more flexible, using almost half her verbs in two or more ways (in up to four frames for some verbs). During the 20- to 24-month period T for the first time uses more of her verbs in multiple sentence frames than she does in single sentence frames (up to five frames for some verbs).

Again, a major stumbling block to the interpretation of these patterns is pragmatic context. It is possible, indeed likely, that T's limited use of so many of her verbs, each of which is itself used consistently, is due to the fact that she uses some of them only in particular contexts. A brief glance at the last videotape (23 months) shows the difficulty of teasing apart T's knowledge of a verb's possibilities and her use of it in particular contexts. Consider, for example, the expression of the agent of an action. On the tape at 23 months T displays with many different verbs her several-month-old ability to express actors. Nevertheless, with other verbs in seemingly identical discourse and nonlinguistic contexts she leaves it unexpressed. For example, she says "Maria got real mad," about Maria's reaction to a spilled liquid some days before. In the same conversation about the same event she says, "Just lick it up" about Maria's actions after the spill – and this sentence was not preceded by any adult utterance making elision of the actor pragmatically appropriate (e.g., she was *not* asked "What did Maria do?"). Another example concerns her expressing of herself as actor when she is performing an activity (which she usually did not do at earlier periods). On several occasions on this same tape (23 months) she says such things as "I bite it" and "I draw on the man," as she is performing the activity. But on several others she says such things as "Pick it off" as she is doing so. Most dramatically, during this same hour T produces 10 sentences with *put* (almost all comments on her own activity and several very short – e.g., "Put it in that," "Put it up there") and none of them expresses herself as actor. I can discern nothing different in the linguistic or nonlinguistic contexts that might predict T's expression or nonexpression of an agent (e.g., she is not being asked particular types of questions in one or the other set, she is not performing different speech acts or physical acts). While it is clear that such a brief and selective analysis cannot be conclusive – and I am not questioning that the actor argument is operative for many verbs at this point (see next subsection) – nevertheless T's actor or agent is clearly not totally verb general even at this late date and even when pragmatic context is taken into account (cf. Budwig, 1989).

It is important to point out that the information in these two analyses

– the complexity and the number of sentence frames for T's verbs – are in an important sense orthogonal. Thus, in many instances T had a verb that was used with no more than one argument at a time, but there were several different argument types used (e.g., *read* is used once with an actor, once with an object, and once with a location). Conversely, some verbs were used in only one sentence frame, but that frame was quite complex (e.g., *gave* was used in only one basic sentence type, but that involved three arguments). Some other verbs (e.g., *draw*) were used in a variety of sentence types with various numbers of arguments. Thus, although these two analyses obviously do not provide conclusive evidence that T's language is organized around individual verbs – pragmatic factors influencing T's production played some role in determining some, though not all, of the observed patterns – they certainly do not provide any support for the existence of more abstract linguistic structures. In all, it would be very difficult for a proponent of abstract rules to explain why T uses the verb *cut* (with one singular exception) in only one single-argument sentence frame throughout her 2nd year of life, while she uses the verb *draw* – learned at around the same time and involving a very similar conceptual profile – in at least eight different sentence frames involving up to three arguments during this same period.

8.2.2. Consistency in argument marking across verbs

Clearly during the period after her two-word pregrammatical stage T becomes more and more adept at syntactically marking arguments in her sentences. Table 8.6 summarizes this marking by argument type and number at each of the three developmental periods discussed earlier. In this analysis I first look individually at T's use of prepositions to mark locative, instrumental, and recipient argument roles, then at T's use of word order to mark the actor and object argument roles.

During the 16- to 18-month period, T seemingly attempts to express location in the postverbal position with four different verbs, but in no case does she use a preposition; it is thus undifferentiated from patients (e.g., "Draw book," specifying where to draw, and "Draw man," specifying what to draw). During the 18- to 20-month period, T begins using prepositions in sentences with verbs; their use is inconsistent, however (see Table 8.6). Focusing only on verbs and sentences that need a locative marker (e.g., when the location is expressed with the prolocatives *here* and *there*, no prepositional marking is needed), T used the appropriate marker (especially *in*, *out*, *on*, and *off*) with 8 verbs in one-argument sentences; she did not use one, even though one was needed, for 6 verbs. For example, during the latter part of her 19th month T says such things as "Spill it beard," "Spill it couch," and "Spill it leg"; at the same time

Table 8.6. *Argument marking across verbs by age, argument type, and number of arguments*

	16 - 18 months	18 - 20 months	20 - 24 months
<i>Actor</i>			
1-argument	3/3	16/18	8/9
2-argument	-	21/21	42/44
3-argument	-	1/1	12/12
<i>Object</i>			
1-argument	14/19	64/76	64/69
2-argument	-	17/17	28/32
3-argument	-	1/1	12/12
<i>Recipient</i>			
1-argument	-	0/3	1/1
2-argument	-	-	3/3
3-argument	-	-	3/5
<i>Instrument</i>			
1-argument	-	0/4	1/1
2-argument	-	0/2	2/6
3-argument	-	-	1/1
<i>Location</i>			
1-argument	0/4	6/14	8/11
2-argument	-	2/11	25/32
3-argument	-	0/1	1/3

Note: Numerators are the number of verbs consistently marked appropriately (with contrastive word order or prepositions); denominators are the number of verbs requiring such marking. See text for problems with the actor and object categories.

she says such things as “Stuck on bowl” and “Marshmallow stuck on there.” In her two-argument sentences during this period, T used a locative marker as needed with 2 verbs, while with 9 she did not (e.g., she used locative prepositions with *blow* and *stick*, but not with *push*). Her one three-argument sentence with a locative at this time was not marked. During the 20- to 24-month period, T consistently provided locative prepositions (the four listed above plus *by* and *at*) for 8 out of the 11 verbs that needed them in her one-argument sentences, and for 26 of the 35 that needed them in her two- and three-argument sentences.

Thus, she says such things as “Travis sit-down chair” at the same time she is saying such things as “Dana push me real high *in* a bagswing.”

Recipients (datives) are not syntactically marked during the 16- to 18- or the 18- to 20-month period, even though T seemingly attempts to express them with three of her verbs. The same is true of instruments, even though she attempts to express them with six of her verbs. During the 20- to 24-month period, T begins to mark her instruments and recipients in one-argument sentences (one verb each) with prepositions (two of two appropriately marked altogether). In her two- and three-argument sentences, she marks the instrument appropriately for three of seven verbs; in the other cases she either omits the appropriate preposition or shows some confusion between cases for which *by* is appropriate and those for which *with* is appropriate (e.g., she says “Cut it with the knife,” but “Crack pecan *by* my teeth”). T also had trouble with marking recipients during this later period in multiargument sentences (six of eight verbs correctly marked consistently), most notable being her use of the preposition *for* with the verb *give* (which takes *to*). Thus, on the videotape at 23 months T says “Give it to me,” but “Santa Claus gave lollipop *for* me.”

Actor and object are more difficult argument roles to assess because there are different ways to determine whether word order has been used productively as a syntactic device. My criterion is some form of contrastive use, but what is meant by this is not always clear. We might mean, for example, the same verb used in different sentences on different occasions placing an actor in the preverbal position and an object in the postverbal position (e.g., “Mommy hammer” and “Hammer table”). Or we might mean one sentence with both actor and object in their appropriate positions (e.g., “Mommy hammer table”). A further stipulation of this might be the requirement that the pattern be reversible so that the same words are used as actors and objects (e.g., “Mommy kiss Daddy” and “Daddy kiss Mommy”). Finally, a special problem for objects is that the child might place other material in the postverbal position in a way that is not different from the way she places the so-called object (e.g., “Mommy spill milk” and “Mommy spill leg”) – implying a lack of differentiation of object and other postverbal arguments.

I will try to tell T’s story with regard to actors and objects as simply as possible. Table 8.6 reveals that during the 16- to 18-month period T consistently places the actor in the preverbal position of her one-argument sentences; the object is consistently placed in the postverbal position for 14 out of 19 verbs. During the 18- to 20-month period, T struggles for the appropriate placement of both actor and object in her one-argument sentences. In her actor–verb–object sentences at this time, however, she consistently uses correct adult word order for 16 of 16

verbs. In fact, if we look more closely at T's very first individual sentences of this type, reference back to Table 8.2 reveals that all 21 actor–verb–object sentences during T's first month and a half (18.24 to 20.08) of three-or-more-word sentences are correctly ordered. During the 20- to 24-month period, T used adult ordering in almost all instances as well (the 2 exceptions are “Cover me clown” as she is covering it, and “Touch me bowl” when the bowl touches her). On the hour-long videotape at 23 months T constructs 41 actor–verb–object sentences, all with adultlike ordering.

The foregoing analysis is generous to objects because I am counting them as appropriately marked any time they occur in actor–verb–object sentences. Thus, in the previous analysis T is given credit for appropriate marking in “Daddy dropped paper” even though she also produced at around the same time “Daddy dropped mine toe.” If we use the criterion that objects have to appear in postverbal position and that T must mark other postverbal arguments at the same developmental period with a different type of marking, the consistency of this analysis drops precipitously. Computing precise numbers in this regard is difficult for a number of reasons – for example, many verbs are not used with other postverbal arguments and what is meant by same developmental period is often difficult to decide. My estimate from an informal examination is that for verbs that are used with more than one type of postverbal argument objects are not marked differently from other postverbal arguments, especially locations, just more than half the time in the 18- to 20-month period; the percentage is just under half the time during the 20- to 24-month period. It is important to note that this same issue does not arise with regard to actors, not because T consistently distinguishes them from other preverbal arguments, but because there are no competing preverbal arguments.

Two other points about actors and objects are important. First, as was made clear in the analyses of the previous section on consistency in sentence types across verbs, many of T's transitive verbs did not show up in actor–verb–object constructions even when we might expect them to (and even when pragmatic context was taken into account); this of course argues against the total generality of these arguments across verbs. Second, more evidence along these lines is provided by an analysis of what kinds of things may be agents and objects. As can be seen in Table 8.7, of T's 21 actor–verb–object sentences in the 19- to 20-month period, 16 have animate agents and inanimate patients. The other 5 have both animate agents and patients, with 3 of those animate patients being *me* (the other 2 are *horsie* as in “Big Bird ride horsie”). During the next 3 months animate agents and inanimate patients still predominate (73%), with 7 out of 10 animate patients being *me* or *you*. With only 1

Table 8.7 Actor-object sentences as a function of animacy of arguments and age

	Animate actor + inanimate object	Animate actor + animate object	Inanimate actor
19 - 20 months	16	5 (3 = <i>me</i> ; 2 = <i>horsie</i>)	-
20 - 23 months	48	8 (7 = <i>me</i> or <i>you</i>)	7 (6= <i>that's</i> , <i>it's</i> , or X <i>hurt</i> her)
23 month video (1 hour long)	30	4 (4 = <i>me</i> or <i>you</i>)	7 (7 = <i>it</i> or <i>it's</i>)

exception, the inanimate agents are *it's* or *that's* or an object that "hurt" her. On the 23-month videotape, of T's 41 agent-verb-patient sentences 30 have animate agents and inanimate patients. Four have both animate agents and patients, with 2 of those being *me* and two being *you*. The 7 sentences with inanimate agents (liberally defined) are all of the form "It(s) _____," as in "It's a tape recorder" or "It makes a funny noise." All of this is clearly in accord with Slobin's (1985) hypothesis about the derivation of early transitive sentences from a "manipulative activity scene" in which an animate actor does something to an inanimate object affected. Note also that not once in all of the diary does T use an object label with an article as an actor or agent, although she uses an article quite frequently with objects and patients.

There is thus little doubt that by her second birthday T is quite facile in expressing actors or agents in the preverbal position and objects or patients in the postverbal position. But it is important also to document that these arguments are only used with some transitive verbs, the object is not well differentiated from other postverbal arguments (the agent has no preverbal competition), and both of these occur with only some types of entities. I thus conclude that T did indeed begin using word order as a productive syntactic device during the 18- to 24-month period. But I also conclude that this use was tied to particular verbs and, moreover, to particular kinds of objects in the particular argument slots of those verbs. The syntagmatic categories were thus of the "hitter" and "thing hit" variety, with hitters being animates only and things hit being inanimates only.

The answer to the question of whether T used verb-general argument marking for all her arguments is clearly no. There is no question that her language becomes more adultlike and her marking becomes more consistent over the course of the study, but at no point does she speak in multiargument sentences with all of her verbs equally, nor does she mark her arguments in the same way across verbs. The question then arises of how, without general categories, T ended up as adultlike as she did. The answer of course must rely heavily (though not totally exclusively) on adult models for each of the verbs involved. Thus, in the extreme case we would have to hypothesize that at this early period of her language development T would use only those arguments that she heard and comprehended other people use with a particular verb, and she would mark those arguments only as she heard others mark them – again, just for a particular verb. Given a less than exhaustive documentation of adult models, this is an impossible hypothesis to test. But one way that some researchers have attempted to circumvent this problem is to focus on the child's nonadultlike productions for which an adult model is very unlikely, that is to say, not just omissions and variations but seemingly blatant "errors" that presumably have no adult models. The possibility is that these may show some evidence of productive uses for which there is no adult model – implying generalizations across verbs.

During T's pregrammatical period – 16 to 18 months – she produced many combinations ordered in a nonadultlike way. For example, she said "Cookie bite" and "Jello hold" in cases where adults would have considered the object involved to be in the object or patient case and thus placed it last, and "Fall-down man" and "Stuck pillow" where the adult presumably would have used the opposite ordering. Although we cannot be certain in such cases, there is no evidence that these nonadultlike productions involve any type of rule or schema (nor, *ex hypothesis*, do her many productions with adultlike orderings at this age). They most likely result from T's lack of attention to word order as a communicatively significant device, and she just said the words in some random order. It is also possible that there are pragmatic reasons, residing in the particular contexts involved, for the nonadultlike orderings (Greenfield et al., 1985). During the 18- to 20-month period, T's language is beginning to become more grammatically consistent – she is learning to order and mark some of the arguments in her sentences with some of her verbs – but there are still numerous nonadultlike orderings to be explained. In particular, T has several verbs for which she frequently (though not exclusively) places the object in a preverbal position during this period. Examples are "Ring got-it," "Balloon have-it," "Bacon

eat-it," and "Ring drop-it." Again, these are presumably explained as a lack of attention to adult word order, with perhaps some pragmatic, attention-getting strategy responsible.⁴

During the 20- to 24-month period, T's blatant errors are minimal. She sometimes places the object first, as noted, and sometimes the object goes at the end when she cannot figure out what to do with it (e.g., "Touch me bowl," "Stay here rug"). There are also a few other examples of nonadultlike prepositional marking, most notably her sentences of the form "Laura gave that for me." This particular sentence frame had a clear adult model in the appropriate context, just not with this particular verb; thus, she was told on many occasions that "This is for you" and "That is for Timothy." When she then uses *give* and *gave* she uses this *for* structure instead of the *to* she has presumably heard from adults. It seems most reasonable that she is symbolically integrating a relational structure with *for* (conceived as an independent structure, a prepositional adjunct) with her verb *give/gave*; she simply has not noticed that adults do not do it this way.

The overall point is that T's "blatant errors" most likely resulted from either her inattention to word order or her creative cognitive acts of combining two independent symbolic structures possibly on the basis of some pragmatic scheme. They did not result from inappropriate generalizations across verbs.

8.2.3. Syntagmatic and paradigmatic categories: Ninio's hypothesis

In the analyses of the previous two sections I have sought to establish, in accordance with the Verb Island hypothesis that the arguments T expressed in her early sentences were different across different verbs, and that the way T marked her arguments was different across different verbs. This would imply that the syntagmatic categories T is working with during her 2nd year of life are verb-specific: such things as the

⁴ It is possible that these examples emanate from an analogy with some other combinatorial pattern. In this case, one of T's very first and most productive combinatorial patterns was with *get-it* – which she learned from "The phone! Go get it" or "The phone! You get it." She learned to say such things as "Ball get-it," and this was true regardless of whether she was asking someone else to get it or commenting on her own behavior. This pattern, learned from an adult model, may then have served as a prototype for other verbs. The main problem is that while many of the patient-first sentences were being used with other verbs, T changed around the ordering of the sentences with *get-it*. Her last object-first sentence ("Pizza get-it") came at 19.03, with all of her many subsequent sentences with this verb using the adultlike ordering. T continued to use the patient-first ordering, however, well into the 20- to 24-month period with other verbs (e.g., "Eggs smell-it," "Grapes pick one"), and so it seems unlikely that they were modeled on the combinatorial pattern of *get*. Perhaps there is some pragmatic scheme that T employs in these cases to obtain an inattentive adult's attention before making the main speech act (cf. Ninio and Snow, 1988).

thrower and the licker, the thing thrown and the thing licked. In the current hypothesis, these will become more general syntagmatic categories as the markers that designate them are noticed to function in the same way and this coincides with some conceptual similarity in reference as well.

The process by which syntagmatic categories are formed is similar to the process by which all categories are formed – it is just that they are relational categories. First, in learning about verbs such as *make*, the child may first hear (or produce) “Make doll” and then “Make bubble,” which provides the first raw material for an abstract “thing made” slot. And it *is* abstract, as the precise actions used to make, not to mention the things made, are not precisely the same in these two cases. A similar process may lead to the “maker” slot and to a slot indicating “the instrument used in the making.” Each of these is a relational concept with both a form and a function. The function is the relation indicated, which has an abstract nature including all makers, all things made, or all instruments for making. The form is the syntactic marker for this relational category, in these cases: the position in the sentence before *make*, the position in the sentence after *make*, and the preposition *with*, respectively. At the same time, of course, the child is learning that the “hitter” goes before *hit*, the “thing hit” goes after *hit*, and the “instrument used to hit” goes last preceded by *with*. Similarly, the “eater” goes before *eat*, the “thing eaten” goes after *eat*, and “the instrument eaten with” goes last preceded by *with*. These have both similar form and similar function to arguments she is learning for *make*. All of the preverbal material indicates a causer or an actor or an initiator (a causal arrow emanating from), all the immediately postverbal material indicates something acted on (a causal arrow leading to), and all of the material immediately after *with* indicates things used by the actor to perform the action. Syntagmatic categories thus result from the consolidation of verb-specific argument categories having similar form and function.

The fact that English uses prepositions, freestanding lexical morphemes, for some of its argument marking makes for an interesting twist to this story. As documented here (and in Tomasello, 1987), T learned some of these as independent verblike words early on – for example, “Hat off” to request that it be taken off. The interesting fact is that before T used prepositions in sentences with true verbs (usually as locative phrases) they always had a preexisting status as the main relational word in two-word combinations (such as “Off table”); there is not one exception to this in the 14 relevant sentences in Table 8.2. Other of T’s prepositions such as *of*, *at*, and *by* – learned later and thus not appearing in Table 8.2 – never had such an independent status; they were learned and used exclusively inside longer phrases and sentences. The possibility

thus arises that T might have constructed sentences with prepositions in two ways: When using a locative phrase already constructed as an independent sentence, she could simply coordinate her two sentencelike structures ("Put it _____" and "On _____" yielding "Put it on there"). When she had not previously constructed the phrase as an independent sentence, she would have to conceive of the preposition as a syntactic device for marking an argument with that verb. This developmental pattern may thus underlie the linguistic distinction between prepositional phrases that are adjuncts to the verb, having to some degree their own independent semantic status, and those that are complements to the verb, having no such independent status (cf. Andrews, 1985). Conceiving of them as exclusively markers for verb arguments thus may not do them total justice.

All of this is relatively straightforward in the case of prepositions and case endings and even intonational markers for which the form of the marker is always the same no matter what sentence it is in. This is not exactly true of word order. Because some absolute identificational criterion such as "first word in the sentence" is clearly not adequate to the task, it would seem that some type of structural analysis must first be effected before something such as "preverbal position" may be considered as a unitary syntactic device across verbs. This is why in my analysis so much importance has been placed on the formation of a word class of verbs. In order to form the verb-general syntagmatic categories designated in English by word order, it would seem necessary that the child construct a paradigmatic class of verbs.

As outlined in chapter 2, the problem with paradigmatic classes is that they are not functional in the child's communicative efforts in the same way as syntagmatic categories; they are organizational outgrowths of the process of constructing syntagmatic structures such as sentences (Nelson, 1985). Nouns and verbs, for example, are not things to be marked for purposes of communication and thus they do not have syntactic devices that signify their category membership (as, e.g., the preverbal position identifies the syntagmatic category of actor). They do have grammatical morphology that is consistently associated with them – for example, articles and plurals with nouns, tense and aspect with verbs – but these serve their own functions outside the predicate-argument complex. Yet there is no doubt that such things as nouns and verbs are real categories for children, as their successful performance in tasks of productive grammatical morphology attest (e.g., Berko, 1958).

The current proposal is that paradigmatic categories are formed in two steps. First, because paradigmatic classes are classes of words and not things, the child must have words that she has treated as mental objects – that is, she must have operated on them with other words or

morphemes. Thus, in the one-word stage no words are mental objects because the child is operating *with* her words, not *on* them with other predicates. Even in early sentences, verbs are only things the child operates with until she uses some larger matrix verb, or some modal operator such as *can't* or *don't* (or their equivalent in other languages), to operate on them. Once there are words that have been treated as mental objects, the stage is set for paradigmatic categorization. But this is not something the child does actively; paradigmatic categories simply emerge from language use, presumably through processes of reflection or the like (cf. Karmiloff-Smith, 1986; Nelson, 1982). This happens as words are categorized on the basis of their combinatorial behavior, including deep-level functional things such as how they fit into verb-argument structure, as well as more surface level things such as what words they cooccur with.

Consistent with this reasoning, Ninio's (1988) hypothesis is that children should not have a word class of verbs until after verbs have appeared in the argument slots of sentences with other predicates (nor should they have a word class of nouns until they have been operated on with predicates). My two modifications are that modal operators such as, in English, *won't*, *can't* and *gonna* (which are much richer in some other languages) can also serve as predicates, and comprehending what the adult means by saying "I can't find it" or "I want to go" also involves operating on one predicate with another.

With these modifications, Ninio's hypothesis is consistent with T's development. Quite early T showed signs of a word class of nouns (or perhaps proper and common nouns). Evidence for this is her beginning productive morphology (e.g., plurals, possessives), pronoun substitution (use of *it* in places where she knows the name of the object involved), and flexible usage of newly learned nouns in novel sentential contexts. Nouns were words she had operated *on* (they had appeared in argument slots) from her earliest word combinations. On the other hand, T showed no signs of a word class of verbs. She had inconsistent verb morphology (see next section), there was no proform substitution of any type, and newly learned verbs participated in a restricted range of sentence frames (perhaps mostly those she had heard it used in). Verbs were words she had only operated *with*. In T's early language, verbs did not appear in argument slots at all. In the rest of the diary there are very few cases of sentences with two true verbs, with one in the argument slot of the other (i.e., not counting such things, which were not frequent in any case, as "Watch me doors open" in which the verbs are of equal status). To be exact there were precisely 8 such sentences prior to 24 months; these are listed in Table 6.12 under the heading "subordinating." If we include modal operators, as I am arguing that we should, there are 9 others (in

appendix for section 6.3.1), and the addition of *wh*-questions adds 18 others – almost all in both cases coming at 23 months. T thus had very little opportunity, and that only late in her 2nd year, to form a grammatical category of verb.⁵

My conclusion is thus that Ninio's hypothesis fits well with T's early language. T did not have a word class of verbs because she did not experience them in the argument slots of other relational terms or verbs; it is only at the end of the period studied here that T has the raw material to begin constructing a word class of verbs. There are obviously other possible explanations, but it is important to note that from a purely surface-level distributional approach, there are few compelling reasons why something like a class of verbs should not be formed at the same time as the class of nouns in children's early language. In terms of the child's own production, verbs are combined with object labels in as flexible a way as object labels are combined with verbs. In terms of the language the child hears, in English in any case, verbs are morphologically marked reasonably often in reasonably consistent ways in language addressed to children (lots of *-ing* endings) – perhaps just as consistently as nouns, some of which take articles and some of which do not. I know of no data, with specific reference to the language addressed to young children, that would help to answer this question. In any case, in the absence of such data, I conclude that the best way to account for the different developmental profiles of nouns and verbs is to recognize not just their different privileges of occurrence, but rather the different ways they *function* in the child's language.

Having a class of verbs, which T presumably does at some point after the end of the period studied here, will result in much more than just being able to assign consistent verb morphology to them all. It also means being able to use a verb in novel sentence frames as soon as it is learned, without exposure to an adult model of those frames with that verb – as T was apparently not able to do during her 2nd year of life. This will of course make the child's grammar much more powerful. Indeed, when looked at in this way, the construction of a category of verb is the most important development leading the child beyond verb-specific grammatical organization, and thus Ninio's hypothesis becomes the basis for the Verb Island hypothesis, especially for languages such as English that rely so heavily on word order.

⁵ One could argue that Ninio's hypothesis, as I have construed it, might predict that syntagmatic categories based on lexical items – i.e., instrumental, locative, and recipient prepositions – should be learned earlier than those based on word order that await formation of a category of verb. Although it is true that categories based on prepositions do not await a verb category, there are nevertheless many factors affecting their acquisition and thus there are no direct predictions about them as compared with the categories based on word order.

8.2.4. Other possible evidence of systematicity

The last set of analyses concern other linguistic phenomena in T's early language that might suggest something other than verb-specific organization. I will examine, very briefly, three: verb morphology, agreement, and complex sentences.

In the analyses in chapter 6 I concluded that T was just beginning to have some productive verb morphology – mostly involving the past tense and the progressive aspect – during the period in which she was producing three-or-more-word sentences (19 months on). The evidence is quite clear, however, that this morphology is not of a verb-general nature. The majority of her past-tense forms were irregular, and there were many occasions when she should have used a past tense with a particular verb but did not, presumably because she did not know it (e.g., “Pee-pee in this room” about a past event). The present progressives were regular, but again she often used uninflected forms for ongoing activities when she did not know the inflected form (e.g., “Clean this grass” as she is doing it). It is also important that although T had 24 past-tense forms and 23 present progressives, there were only 4 verbs that were used with both endings. And regardless of the status of the inflections T did have, over two-thirds of T's 150+ verbs were never inflected in any way. I thus conclude that T's verb morphology during the period prior to her second birthday was of a verb-specific nature – that is, she learned some things about how to inflect a number of verbs in one of several ways, but she did not show any evidence of inflections applying to the entire class of verbs (cf. Bloom et al., 1980).

It is important to note in this regard, as already alluded to, that T clearly had begun to construct something like a word class of nouns (or perhaps proper and common nouns) early in the current study, if we take as our evidence the productive use of grammatical morphology. Not only were many nouns used in similar ways combinatorially and pronouns often substituted for object labels in various argument slots (as well as modified objects from 19 months on), but T very early used productively plural and possessive markers. By her 18th month, when her most sophisticated language was still only two-word combinations (and no other morphological or word-order markers were being used productively), T used both possessives and plurals in a consistent, widespread, and productive manner: possessives with many of her proper names and plurals with many of her object labels. The fact that in T's agent–patient sentences animates were almost always agents and inanimates were almost always patients may combine with these morphological patterns to suggest that T really has two classes (proper and common) rather than one – the current data cannot discriminate between these possibilities.

All of which would seem to be evidence for at least the beginnings of a category of something like nouns, opening the possibility that things learned for one member of the class are immediately applicable to other members of the class. But there is no such morphological or other evidence for T's verbs. My prediction is thus that from 18 months on, T could have passed the "wug-test" (Berko, 1958) for productive grammatical morphology for plurals and possessives with novel nouns, but she would not have passed an analogous test with past-tense and present-progressive markings with a novel verb. Interestingly, Moder (1989) argues and presents evidence that children's past participles retain a verb-individual flavor well after the time they have mastered this construction for virtually all of their verbs (cf. also Bloom, 1981).

Another phenomenon that is important in helping to decide the generality of T's grammatical structures is agreement. T had begun to show the very first signs of agreement when the study ended. She had begun using various forms of the copula in agreement with the actors involved – for example, on the videotape at 23 months she says "It's a tape recorder," "We are at school," and "I'm on the keys." However, there are only a few random examples of other attempts at agreement with just a few other verbs anywhere in the diary or tape corpus. It thus seems that, as with her argument structures, agreement for T was a matter confined to only a select number of verbs (especially the irregular forms of the copula).

One final set of structures are those that some would call transformational, that is for T at this time: negatives, questions, and sentences with verbal complements. Following Schank (1980), Berman (1988), and especially MacWhinney (1977), I classify these as discourse-related grammatical structures, that is to say, the child is learning to say things from a particular starting point, not transforming known sentences. For example, with negatives she is learning that such things as *I don't...*, *I won't...*, and *I can't...* require that the rest of the sentence be ordered and marked in certain ways. And she is learning that *no* and *not* can only be put in certain places when she is attempting to express a negative meaning. With questions, T begins with *who* or *what* or *can* and then must learn to structure the sentence given this beginning. T's early use of *why*-questions illustrates beautifully how she begins with the word *why* and then structures the rest of the sentence. It is also important that almost all of T's sentences with complements used the mental-state verbs *look* or *want* as matrix verbs, which agrees quite closely with the findings of Bloom et al. (1989) who found a similarly restricted set for the four children they studied.

Looking at all of the data, in the period prior to 24 months, T only used negatives with 7 of her verbs, she only used questions with 12 of her verbs, and she only used verbal complements with 3 or 4 of her

verbs. Because these begin late in the study, it is possible that T has verb-general schemata for negatives and questions and we are simply observing the first manifestations (which have to begin with some verbs). However, it is more likely that, like all of the other grammatical phenomena examined in this chapter, negatives, questions, and complement structures are grammatical structures learned first for use with individual verbs.

8.2.5. *T's language and the Verb Island hypothesis*

Although I have not emphasized it in the analyses and discussions of this chapter, it is clear that verbs were the major sources of grammatical structure in T's early word combinations and sentences, especially those beyond the two-word stage. Her sentences without verbs composed only a small minority of her grammatical constructions, and they did not lead to more complex structures by themselves (although they were in many cases integrated into sentences with verbs later on). Other possible forms of grammatical organization other than verbs (e.g., rules of sentence formation) are not needed to account for language development during the 2nd year of life. This is the first, positive aspect of the Verb Island hypothesis.

The analyses of this section have provided evidence for the other aspect of the Verb Island hypothesis, namely, that these verbs did not operate in T's grammar as a coherent class; they operated as individual islands of organization. Her individual verbs were used in very different sentence types, even when those verbs were seemingly semantically and pragmatically similar; thus, such obviously related pairs as *push* and *pull*, *eat* and *drink*, *draw* and *cut*, *move* and *stay* differed from one another drastically in the number and type of sentence frames in which they appeared. This was undoubtedly due in part to the way in which T found it useful to use these verbs in communicating, but even when she used two similar verbs in similar pragmatic contexts during the same developmental period, the sentence frame chosen for one was not always a good predictor of the sentence frame chosen for the other (see section 8.2.1). Conversely, when the developmental history of the way T used a particular verb is examined, there is very good predictability: She almost always used a verb in the way she had used it previously, and when she did add linguistic material it almost always added only one small increment of complexity (see section 8.1.2). Overall, by far the best predictor of T's use of a given verb at a given time was *not* her use of other verbs at that same time, but rather her use of the same verb at an immediately preceding time.

Other aspects of T's early language also show very narrow specificity.

Agents and objects were used with a minority of appropriate verbs and were confined for the most part to animate and inanimate objects, respectively. Instruments, recipients, and locations were all in the post-verbal position, often without appropriate prepositional marking, often making their differentiation from objects or patients, and one another, problematic. Questions, negatives, complements, and agreement phenomena were each confined to use with a handful of verbs. While there was evidence of productive noun morphology, there was no evidence of productive verb morphology extending beyond individual verbs. I thus conclude from all of this that T's language during her 2nd year of life is best explained in terms of the semantics of individual verbs, providing strong support for the Verb Island hypothesis.

8.3. Processes of early grammatical development

Almost all treatments of syntactic and grammatical development focus on the acquisition of rules. As argued by Wittgenstein (1953), Kripke (1982), Langacker (1987), Lakoff (1987), and previously in this monograph, rules are not the best way to characterize linguistic competence. At the very least I hope to have demonstrated in the current study that they are not needed for 2-year-olds. They are not needed because the same job can be done by:

1. Symbols whose meanings contain grammatical valences (verbs and other predicates) indicating roles that other linguistic elements might play in a larger symbolic structure.
2. Second-order symbols (syntactic devices) for marking in a conventional fashion which of these roles are in fact being played by which linguistic elements in the larger symbolic structure.
3. Syntagmatic and paradigmatic grammatical categories that represent schematically whole classes of particular symbolic structures and relations among these.
4. Processes of symbolic integration, that is, sentence construction operations involving the integration of already constituted symbolic structures and categories into larger symbolic wholes.

To conclude this chapter, I discuss these linguistic structures and processes, attempting to show in each case their grounding in the general cognitive and social-cognitive skills of the 1- to 2-year-old child.

8.3.1. Cognitive bases: Event representations

In modern views of cognitive development (e.g., Fivush, 1987; Mandler, 1983; Nelson, 1986), 1- to 2-year-old children – beginning language learners – live in a world of events: temporally extended sequences with one or more entities in various interrelations. All four of the cognitive

processes just listed fit comfortably into a general theory of early cognition based on event representations.

First of all, some of children's first words, verbs, are used to refer to events. This means that they inherit all of the conceptual complexities of events (they gain conceptual coherence for the child in terms of their functions: Events that lead to the same result are considered the same event). Much of the organization and connectedness of children's cognition during their 2nd year of life is in terms of the thematic relations among entities in event representations (e.g., doctors and hospitals, sinks and washing, brooms and sweeping). The thematic relations within an event structure are perfectly analogous to the syntagmatic relations of a sentence, centering mainly around the roles of objects in events. Thus, when the child relates a cow to a barn or a broom to dust in an experimental setting, she is essentially identifying items that go together in the same way they go together in sentences: cows are located in barns ("Cow in barn") and brooms are used to sweep dust ("Sweep dust" or "Broom sweep dust" or "Sweep dust with broom"). These types of relations, whether in sentences or evoked from the child in an experimental setting, are based on nothing other than the child's perception and representation of entities and actions as connected in events.

The difference in the case of language is that children now go on to form broader syntagmatic categories, categorized according to the syntactic device involved. For example, the preverbal position becomes a marker for an actor role across many verbs, the preposition *for* becomes a marker for the benefactive role across many verbs, and so forth and so on. Although the child may be building generalizations from her nonlinguistic experiences – and these may in fact be the underlying concepts of causality, location, and so on, on which the syntagmatic categories in language depend – there is nothing quite analogous to syntagmatic categories in the nonlinguistic development of thematic relations. This is presumably because there are no markers in nonlinguistic cognitive development to serve as "lures to cognition" around which a higher-order category might form.

Paradigmatic categories in language (e.g., noun and verb) are basically taxonomic categories. For Nelson (1982, 1985, 1986), taxonomic categories derive from the existence of "slots" in syntagmatically constructed event structures. Slots are constructed by the child's treating the various items that play a particular role in the event structure in the same way; for example, in a peekaboo game many different objects are hidden and found, and thus the hidden-object role is abstracted as a slot. Taxonomic categories of objects are first manifest as specific roles in specific events, and members of the class are all items that may play that specific role. More general object categories are formed when it happens that the

same entities may play different roles in different event structures (e.g., the ball may be hidden or it may participate in a rolling game).⁶

It is no accident that this is precisely the same process that operates in the formation of the paradigmatic word classes in language – only in this case what is being categorized is words, not things. Once words have become mental objects, they are grouped together based on similarities in the way they fit into the syntagmatic slots of sentences. For example, as it is noticed that the same words that function as “hitters” also function as “kissers,” and sometimes as “hittees” and “kissees,” a class of these words begins to form. The process is the same on both the nonlinguistic and linguistic levels because in both cases the task to be accomplished is the same, and the cognitive processes used to accomplish it are the same.

The upshot of all this is that the child’s acquisition of language during her 2nd year of life (and presumably beyond) is not something distinctly different from her nonlinguistic cognition, but rather reflects basic cognitive processes. The acquisition of language depends on the fundamental cognitive processes of symbolization and categorization. Verbs and syntactic devices work together to allow the linguistic expression of complex events – which are the major form of cognitive representation during this developmental period. The resulting syntagmatic categories are based on thematic relations (although their collation around a particular syntactic device may be unique to language). Paradigmatic classes are analogous to the taxonomic categories that develop in the child’s nonlinguistic event structures, but in this case the entities are linguistic and similarity of function is based on their functioning in the linguistic system itself. These categories are what give grammar its productive power. It is also of fundamental importance, I believe, that in all of the cases of linguistic category formation – lexical, syntagmatic, and paradigmatic – the resulting categories have been shown by many researchers to be organized prototypically, just as are nonlinguistic categories (Lakoff, 1987; see the papers in Corrigan et al., 1989), which provide the strongest experimental evidence to date that syntactic categories reflect basic cognitive processes.

The final set of cognitive processes involved in language acquisition are symbolic integration operations, that is, the operations used to produce, and perhaps to comprehend, larger structures in which items from the inventory (including categories) are combined and coordinated into sentences. In the simplest cases, these are fairly straightforward mental combinations, concatenating two words, for example. Established structures with their own internal complexity can also be conjoined, usually

⁶ This is not to deny the role of perceptual similarity in forming categories, just to deny its sufficiency. Thus, perhaps something such as Mervis’s (1987) formulation of form-function correlations is needed here.

in ways that preserve the previous ordering patterns of elements within the constituent structures. More complexity is added when the coordination among established structures involves subordinating one to another in some way. As the child's linguistic sophistication grows, her constructional activities become more complex, mainly because the symbolic structures in her symbolic inventory become more complex and abstract. As the current study ends, T is just beginning to use really complex operations involving multiple suboperations, that is, those that the English language requires to form conventional questions, negatives, and sentences with subordinated complement structures. But it is reassuring that when the preschool child's constructional activities with sets of complex objects are compared with their sentence construction operations at the same age, many of the same strategies are found, for example, the conjoining and subassembly methods of the children studied by Greenfield (1978). More recently, Greenfield (in press) has provided a wealth of evidence that the hierarchically organized and nested operations required in constructing complex sentences are associated developmentally and neurologically with an analogous set of cognitive operations on physical objects.

8.3.2. Social-cognitive bases: Cultural learning

Just as lexical items, the syntactic conventions of a particular language must be learned. One possible scenario might go like this. Children and their interlocutors interact within culturally constituted events, and they often have more than one thing to say in this event. Thus, within a particular routine the child may attend first to the object and then to an action or property, naming each in turn ("successive single-word utterances"; Bloom, 1973). Alternatively, the child may say one thing in an event and the adult follows by saying another, for example, in the high-chair the child might say "More," leading the mother to open the refrigerator and ask "Juice?" ("vertical constructions"; Scollon, 1976). The important point for current purposes is that the event structure is already understood by the child from previous nonlinguistic experience, and it thus provides a structural coherence that implicitly relates the different utterances to one another in specific ways (cf. Veneziano, 1990).

Children learn their early words within these event structures via a process of cultural learning (as outlined in chapter 7). Cultural learning is also at work in the child's learning of syntactic devices. At the earliest stages of word combination, children may mimic adult syntactic devices such as word order and grammatical morphology without understanding their productive functions, that is, without understanding their potential for changing the meaning of utterances in specific ways without changing

any of the contentive words involved. At some point, however, the child does begin to attend to these things, and she must then learn how syntactic devices are used in very much the same way that she learned how words are used: by determining why the adult is using this order rather than that order, or a known word with this ending rather than that ending, or this function word rather than that function word. In all cases this must be done by determining what aspects of the current situational context “cause” the adult to use that particular linguistic form. As with lexical items, the child quickly generalizes her syntactic devices in such a way that we may legitimately talk of categories – in this case syntagmatic categories.

Words and syntactic devices thus are both linguistic conventions that are learned by the child pragmatically, that is, through cultural learning. The child attempts to discern the significance of the linguistic form, given her determination of what adults are attempting to do: the reasons for their behavior. As argued previously, however, the forming of general paradigmatic categories of linguistic symbols is not something that falls into the general category of learning. Learning typically refers to those acquisitions that come from more or less direct interactions with the environment, either physical or social. Paradigmatic categories develop from the child’s reflection on her own linguistic comprehensions and productions, and this would not seem to be a case of learning, cultural or otherwise.

The first step in acquiring paradigmatic classes is the creation of mental objects, because only these can be manipulated and classified. I propose that although the process of reflection that creates mental objects – of words or other cognitive phenomena – is not learning per se, it does involve cultural learning in an indirect way. I propose that reflection is nothing other than the process of cultural learning turned on the self and its products. If cultural learning involves taking someone else’s perspective on something, there are times when that something is one’s self or one’s own behavior. Imitating the process of someone focused on me results in my looking at my own behavior as if someone else were looking at it – from another’s perspective, as it were. And it is very important that in this self-observation, I may also use all of the powers of categorization that I use in my observation of the outside world. The second step is the formation of paradigmatic categories using these powers of categorization to determine similarities in the way mental objects function in the language system. Formation of the paradigmatic category of verb provides the basis for a truly powerful human grammar.

This hypothesis is obviously very closely akin to the proposals of Piaget (1985) on “reflective abstraction” and, more specifically, to Karmiloff-Smith’s (1986) model of cognitive development in which mental oper-

ations that have reached a certain degree of organization on one level become objects of contemplation or manipulation for a higher level. The creation of mental objects (things to operate on) out of mental operations (things to operate with) finds its ultimate end in recursive systems in which all operations can themselves be elements in other operational structures. I do not pretend to understand how all of this works in the many complexities of human linguistic communication. Reflection in cognitive systems is mostly not an intentional or conscious process, and is thus not the same thing as someone consciously taking the perspective of another person observing her – as presumably happens in the construction of a “looking-glass self” (Mead, 1934). It is most likely that reflection is a biological exaptation of the process of cultural learning for use in another way – the cognitive apparatus is using the perspective-taking abilities of humans to create special types of cognitive systems with a special type of power.

This is obviously a deep and difficult issue that lies at the very heart of what it is to be a human cognizer, and I do not pretend to have done anything more than to point in a direction. What is important for current purposes is the recognition that the processes of cultural learning and reflection are basic social–cognitive processes that manifest themselves in many areas of the child’s cognitive development, including most especially the many forms of cultural tool use and social-conventional behavior. There is no question that language acquisition is a unique form of cultural learning in many respects, some of which I have attempted to indicate, or that once it has developed to a degree it takes on system properties that show a certain autonomy. Nevertheless, the overall point is still valid: The most fundamental cognitive and social–cognitive skills that the child brings to the task of language acquisition are the very same skills she brings to the acquisition of all of her other cultural skills.

8.4. Summary

In the vast majority of cases, T’s earliest word combinations involved verbs (broadly defined) as the major structuring element. Before 18 months, however, T showed no signs of productive syntactic marking of arguments within these combinations (the one exception being her marking of the possessive in object–object constructions). These composite structures were constituted through acts of symbolic integration, analogous to cognitive acts of “mental combination” involving the coordination of individual symbolic structures into a single symbolic whole. In the next 6 months, at age 18 to 24 months, T began to construct more complex sentences by engaging in more complex symbolic inte-

gration operations involving more complex structures as the items to be coordinated. These almost always used as one piece of raw material previously produced sentences with the same verb, and almost never added more than one small increment of complexity (and almost never reordered elements). There was very little consistency across verbs in these early sentences, in either the number or the type of arguments used – even for verbs that were closely related semantically. T also at this time began to learn a good deal about how to mark words syntactically for their various roles in these sentences, but she also did this on a verb-by-verb basis; what she learned about the marking of one verb had nothing to do with the marking of other verbs. Her use of the same verb over time, however, showed very strong consistency. The best predictor of T's use of a given verb at a given time, therefore, was *not* her use of other verbs at that same time, but rather her use of the same verb at an immediately preceding time. The pattern of T's language development provides strong support for the Verb Island hypothesis.

This characterization of early language leads to the inference that T's earliest syntagmatic categories were such things as the hitter and the thing hit, rather than such things as the verb-general agent and patient. More general syntagmatic categories emerge only later as the markers that designate them are noticed to be the same (or at least prototypically related) and this coincides with some conceptual similarity of function as well. This is not a particular problem when the syntactic device is a lexical item or a morphological marker, in which case the syntagmatic category is learned via straightforward processes of cultural (imitative) learning. The formation of syntagmatic categories on the basis of word-order regularities, however, relies on some form of structural analysis involving the paradigmatic category of verb. Paradigmatic categories are formed on the basis of similarities in the way words are operated upon by other words (Ninio's hypothesis). Thus, T's word class *noun* begins emerging early because the early combinations the child produces and understands involve object labels in argument slots, in which they are treated as mental objects capable of being manipulated, reflected upon, and categorized. T did not treat her early verbs in this same way, and so she could not reflect on them and so construct a category. This means that the child's syntagmatic categories based on word order remain verb-specific because she cannot generalize what she knows from one verb to another. The absence of a paradigmatic category of verb is thus the basis for the Verb Island hypothesis. At the end of the study (24 months) T's verbs are just beginning to appear in the argument slots of other verbs and predicates.

Language acquisition as cultural learning

Obviously one must be humble in drawing definitive conclusions from a naturalistic investigation of one child learning one language. It is important to point out, however, that many phenomena of language acquisition can only be studied with diary data, that is, data in which all of one child's linguistic productions are systematically documented in a longitudinal fashion (Mervis, et al., in press). The current analysis of T's sentence-construction operations, for example, was only possible because there was available a fairly complete developmental record. In any case, the current study has discovered some interesting facts about this one child's language acquisition that may serve as hypotheses to test with other children learning English and, with proper modification, with children learning other languages. Such generalizations are especially promising in the case of verb-related phenomena, given Maratsos's (1987) finding that the only grammatical structures common to all of the world's languages are basic predicate-argument structures.

What I do in this final chapter is three things, each very briefly: First, I summarize the major findings of the study; second, I offer a speculation on the human capacity for language (including a comparison of children and language learning chimpanzees); and third, I look briefly at later language development to see if the current approach may be extended usefully beyond the child's second birthday.

9.1. Summary of major findings

Anyone looking closely at T's early language must, it seems to me, come away with a strong impression of concreteness, particularity, and idiosyncrasy. Many linguists see these features in adult language as well (e.g., Bolinger, 1977; Fillmore, in press; Langacker, 1987), but in the case of the 1- to 2-year-old child they are even more pronounced. There is individuality and contextedness everywhere, signs of broad-based rules nowhere. T did begin bringing order and systematicity to her language

during her 2nd year of life, but it was a gradual, constructive process. It did not resemble in any way the instantaneous and irrevocable setting of parameters. The process as I see it may be explicated by summarizing the major findings and interpretations of the current study.

1. Like the children reported by many other researchers, T learned a wide array of verbs and relational words early in her linguistic career – 162 before her second birthday. These were used to predicate things about other things and covered a wide variety of conceptual situations defined in all cases by some notion of “process,” that is, each verb represented a temporally extended event (states are conceived of as enduring over time). Of particular importance were two types of early verbs: change of state and activity.

2. T’s change of state verbs were defined by specific transformational sequences involving beginning states and end states. These verbs clustered into six relatively well defined semantic domains, with all of the words within a domain closely interrelated and interdefined. The earliest change of state verbs in each domain involved a single object undergoing a dynamic transformation (e.g., *more*, *move*, *fall-down*). Development proceeded from these initial global terms to more specific terms in each domain. Dynamic verbs preceded stative and causal verbs in each domain.

3. T’s activity verbs were defined by specific activities, often involving specific objects or body parts. The prototypical activity verb involved someone acting on a concrete object (e.g., *hammer*, *sweep*, *lick*) or just acting (e.g., *cry*, *jump*, *sleep*). These verbs did not seem to cluster into well-defined semantic domains – each seemed to be an independent entity. There were not many interesting developmental changes in these words during T’s 2nd year of life.

4. T learned many of her verbs in nonostensive contexts, for example, when adults requested an action of her, asked about her intentions to act, or informed her of their own impending action. She learned some verbs with minimal linguistic context as well.

5. T’s earliest two-word combinations before 18 months showed no signs of any productive syntactic devices such as word order or prepositional marking.

6. Some of T’s early verbs were prepositions in adult language (e.g., “Hat off”). A few months later many of these had changed to more adultlike prepositional functions (e.g., “Take hat off there”). In all of T’s earliest uses of words as true prepositions, the preposition had first functioned as a verb.

7. T’s earliest three-or-more-word sentences (18–21 months) were almost all structured by verbs. The vast majority of these involved straight-

forward coordinations of already produced word combinations (93%), preserving in almost all cases the established ordering patterns of the constituents (99%).

8. T began marking the syntagmatic relations in these three-or-more-word sentences through the use of contrastive word order and prepositions. She did this, however, on a verb-by-verb basis. By far the best predictor of the arguments and argument markings that T used with a particular verb at a particular time was previous usage of that verb, not same-time usage of other verbs. This is taken as support of the Verb Island hypothesis.

9. Near the end of her 2nd year, T began showing some signs of a paradigmatic class of nouns: productive noun morphology, pronoun substitution, and flexible use in argument frames. There are few signs of a paradigmatic category of verbs: no productive verb morphology across verbs, no proform substitutions, and inconsistency of argument frames across verbs. T was using nouns in the argument slots of verbs at this time, but verbs were not occurring in the argument slots of other verbs. This is taken as support of Ninio's hypothesis that paradigmatic classes are formed as a result of linguistic items being operated upon by predicates. The lack of a word class of verbs underlies Verb Island phenomena.

10. T's first complex sentences – negatives, questions, and sentences with two verbs – all emerged first with a limited set of verbs, providing further support for the verb-specific organization of T's early language.

I have argued throughout this monograph that these general facts, along with all of the particularities of T's early use of particular verbs and sentences, conspire to indicate that in the second year of life comprehending and producing language is fundamentally a cognitive and social-cognitive activity. T did not follow specialized linguistic rules in any sense of the term. The systematicity apparent in her language was not the result of broad-based rules, but rather the result of the acquisition of symbols, particularly those with grammatical valences implying conceptual roles (e.g., verbs); the acquisition of second-order symbols for marking those conceptual roles (i.e., syntactic devices); the development of syntagmatic and paradigmatic categories of symbols; and the use of symbolic integration operations to construct larger linguistic wholes. I have further argued that these skills and structures all emanate from the complementary facts that young children's conceptual representations are organized in terms of *event structures*, which are composed of actions and conceptual roles that reflect to some degree the preexisting organization of cultural activities, and that young children have capacities of *cultural learning* that enable them to acquire communicative symbols for different aspects of these event structures.

9.2. A speculation on the human capacity for language

My emphasis on event structures and cultural learning as the bases of children's early language reflects a growing trend in Developmental Psychology. Following Vygotsky (1978), more and more researchers are recognizing that the ontogeny of human cognition, especially the "higher mental processes," is fundamentally a social enterprise. Human children develop as they do both because they develop in a cultural context that structures tasks for them in particular ways and because they have, among other capacities, a special capacity for taking advantage of this structuring.

The emerging paradigm of Cultural Psychology focuses mainly on the first aspect of this equation, the structuring role of cultures. Thus, such researchers as Cole (1989), Rogoff (1990), and Bruner (1990) all emphasize the role of culture, as a preexisting set of tools available for the child, in shaping human cognition. With particular reference to language acquisition, this structuring takes the form of routine cultural activities – also known as formats, event structures, or joint attentional episodes. These activities have certain roles in them: Taking a bath involves an adult turning on the water and undressing the child, the child entering the bath and playing with toys, and so forth and so on. It is by being included in these activities that young children begin to participate in the language practices of their culture and to understand the many roles this involves (see, e.g., Bruner, 1983; Nelson, 1985; Peters & Boggs, 1986; Tomasello, 1988).

On the other side of the equation, children must be individually equipped to take advantage of the structuring that cultures provide. Most important from the current perspective, this takes the form of skills of intersubjectivity and perspective taking (e.g., Trevarthen, 1979), including all of the phenomena currently grouped under the rubric of "theory of mind" (e.g., Astington, Harris, & Olson, 1988). These skills of social cognition are of crucial importance because they form the basis for the form of social learning I have called cultural learning (Tomasello et al., 1991), which allows children to participate in cultural activities as full participants. To understand and learn from a cultural activity, the child must be able to see it, at least to some degree, from the adult's point of view. In the case of language acquisition, this means being able to conceive of the adult as an intentional agent, and indeed to perceive the adult's specific intentions. This is necessary if she is to understand what is transpiring in the activity – to be able to tell the difference between a person "moving" an object and "putting" or "giving" it, for example. When such understanding is present, cultural learning in the form of the imitative learning of linguistic forms follows quite naturally.

None of this is to deny the crucial importance of nonsocial–cognitive skills, of course: the ability to form concepts and categories of objects and actions, the ability to acquire symbols and their underlying conceptualizations, the ability to integrate these conceptualizations into larger symbolic wholes, just to name a few. And cultural learning itself relies in a fundamental way on basic cognitive capacities as well: To take the perspective of another requires the ability to conceptualize the entities they are focused on. But the social–cognitive prerequisites of language acquisition have not received as much attention, especially in the sense of the prerequisites necessary for the child to participate in cultural activities or event structures and to acquire language through them. Moreover, if we compare human language acquisition to the communicative skills of our nearest primate relatives, we will find that it is in social–cognitive and cultural learning skills that the most obvious differences are displayed.

In their natural habitats adult chimpanzees do not construct cultural activities of the human variety, nor do they actively teach their youngsters about any aspect of their environments (Tomasello, 1990). The youngsters, in turn, have skills of imitative learning that are very poor compared with those of human children (Nagel, Olguin, & Tomasello, 1991; Tomasello, Davis-Dasilva, Camak, & Bard, 1987). With regard to communication, chimpanzees in their natural environments do possess means of intentionally communicating with others in complex ways (Tomasello, George, Kruger, Farrar, & Evans, 1985), but these are not based on true symbols and they are not passed on from generation to generation (Tomasello, Gust, & Frost, 1989). Instead, each individual conventionalizes with other individuals certain metonymically based signals, analogous to children's raising their arms to an adult to be picked up (Locke, 1978). Chimpanzees do not, in their natural environments, culturally learn from one another.

Chimpanzees raised in humanlike cultural environments display a different set of skills. Their ability to imitate object-related actions is much superior to that of their feral peers, and in many ways is comparable with that of young children (Tomasello, Savage-Rumbaugh, & Kruger, 1991). They also can acquire humanlike linguistic symbols in cultural environments, but not just any such environments will do – event structures are important. The chimpanzees Sherman and Austin, for example, learned to use graphic symbols and could even use them in the absence of their referents (Savage-Rumbaugh, 1986). The problem is that all of the various aspects of symbol use that children acquire so effortlessly had to be taught to these chimpanzees separately and laboriously: Comprehension did not necessarily lead to production, and use in one function (e.g., as a label) did not necessarily lead to use in another

(e.g., use as a request). The pygmy chimpanzee Kanzi, successor to Sherman and Austin, did not show these limitations, however. Savage-Rumbaugh (1990) reports that the crucial difference is that whereas Sherman and Austin were “trained” to do certain things in certain situations, Kanzi was not trained at all. Kanzi was invited into highly structured cultural activities such as changing diapers, preparing to go outdoors, taking a bath, blowing bubbles, riding in the car, and looking at a book. Without any specific training at all, Kanzi learned symbols in these routine event structures, especially symbols designating salient objects, and used them for all kinds of functions without specific training.

It is thus clear that when raised in the context of human cultural activities and event structures chimpanzees have the ability to learn some types of humanlike symbols. What is not clear is precisely what types of symbols they can learn. Of most importance for current purposes, it is not clear whether chimpanzees have the ability to acquire words for the events themselves (i.e., verbs) in ways that indicate an understanding of all the relevant roles. They clearly do learn words for activities and changes of state, but these have not been as systematically studied as object labels. Thus, many of their verbs are used as requests only, and might be interpreted as simple requests for object states; for example, a request to “Give” may simply be an all-purpose request for an object, not containing all of the conceptual roles of the human use of that word. Of crucial importance, therefore, is discovering whether chimpanzees can learn to simply comment on such things as other persons giving things to each other, which would seem to include more explicitly all the different roles involved. As argued previously, object labels (and perhaps requests for object states) are easier to acquire with a rudimentary form of cultural learning and intersubjectivity: visual–spatial perspective-taking (picking out an object). Verbs require more conceptual perspective-taking, involving the speaker’s intentions and all of the various conceptual roles involved.

Chimpanzees’ abilities with syntax and grammar are even less clear. Chimpanzees who have learned linguistic symbols in cultural routines produce with regularity novel word combinations aimed at constructing new meanings, and these show much creativity. But there is no evidence of productive syntactic devices in the form of contrastive word order or productive grammatical morphology (Greenfield & Savage-Rumbaugh, 1990). There is some evidence that Kanzi is able to use syntactic devices (contrastive word order) in his comprehension of novel sentences. But so far this has been systematically documented for only 10 to 20 specific verbs (Greenfield & Savage-Rumbaugh, 1991). Neither Kanzi nor any other chimpanzee has shown a tendency to form syntagmatic or paradigmatic grammatical categories across verbs. At best, therefore, chim-

panzees to date have shown grammatical competence in comprehension only, and that at a Verb Island level only.

I would argue that the reason that chimpanzees do not acquire language in the way that humans do is that they are not as adept at cultural learning. For example, it may be that they can acquire symbols for objects because these require only simple perspective-taking; symbols for verbs may be another story because they require more conceptual perspective-taking. Chimpanzees' failure to acquire productive syntactic devices may be due to the shaky status of their verbs or to the fact that syntactic devices are relational concepts that also require conceptual perspective-taking. The further fact that chimpanzees do not have syntagmatic and paradigmatic categories might derive from failings of verbs and syntactic devices, or, if these have been underestimated, it might derive from the fact that they do not use their cultural learning abilities to reflect on their own behavior. I would also argue that the reason chimpanzees in their natural state do not create and pass along to their progeny structured cultural activities of any kind is that they do not engage in the form of cultural learning that emerges latest in human ontogeny, collaborative learning, in which individuals construct activities that reflect the active perspective-taking of two individuals aware of the other's perspective-taking abilities (Tomasello, Savage-Rumbaugh, & Kruger, 1991).

My speculation on the human capacity for language is thus as follows. There is no question that there are numerous specific cognitive preparations for language that allow the acquisition and use of symbols and sentences inside events, for example, the ability to form concepts and categories of objects and actions, the ability to create and use symbols, and skills of hierarchical construction. But language acquisition also requires skills of cultural learning and reflection, and it requires that something like event structures, in the form of preexisting cultural activities, be present in the environment. My argument is that chimpanzees are very similar to humans in many ways cognitively, for example, in their concepts of objects (Vauclair, 1984) and in their ability to categorize (Oden, Thompson, & Premack, 1990). Their sensory-motor worlds are probably very much like those of a 1- to 2-year-old child, at the very least. Chimpanzees are not as similar to humans in their skills of social cognition and cultural learning, however. They may be limited in what they can learn imitatively (i.e., maybe some verbs are conceptually too complex), and they do not use their cultural learning abilities to reflect on their own behavioral productions to construct grammatical categories. Nor are they capable of *creating* among themselves, without human intervention, the kinds of cultural activities that would allow their progeny to acquire humanlike symbols for communication.

If we take seriously the emerging view that virtually all of the unique aspects of primate intelligence are concerned with social cognition and social learning (Byrne & Whiten, 1988), it is reasonable to speculate that human beings evolved in further ways along these lines, and that this is what accounts for both the creation of cultural artifacts such as languages and the individual capacity for learning how to use them. It is a part of the normal human developmental process to interact intersubjectively with others, to impute intentions and mental states to them, and thereby to learn from or through them skills of linguistic communication and other cultural skills. The process of cultural learning is what makes the acquisition of cultural products so natural for humans, and so unnatural for all other species.

As a kind of coda to this discussion, I would like to make one small point about autistic children. Approximately half of children diagnosed as autistic do not learn language at all. Those who do learn some language often use it in pragmatically inappropriate ways, for example, showing a confusion of perspectives in learning personal pronouns such as *I* and *you*. Many autistic children have deficits of joint attention, imitation, and conceptual perspective-taking as well (e.g. Baron-Cohen, 1988; Dawson & Adams, 1984; Landry & Loveland, 1986). And recent studies (e.g., Mundy, Sigman, & Kasari, 1990) have found a direct correlation between the nonverbal joint attentional skills of autistic children and their level of linguistic functioning. It would thus seem that autistic children come to the language acquisition task with something less than the full human complement of joint attentional and cultural learning skills, and their language suffers in proportion to those deficits. But one other interesting fact is that autistic children who do show some facility with language also show syntactic structures of some complexity as well (Tager-Flusberg, 1989). This might suggest that a fundamental difference between chimpanzees and humans is that human beings are capable of using whatever cultural learning abilities they have to reflect on their own behavior and form paradigmatic categories, but chimpanzees either do not have cultural learning skills great enough to do this, or else the ability to use these skills in reflection is somehow not available.

9.3. Later development

I have argued throughout this monograph that a Cognitive Linguistics approach to early language acquisition is preferable to more formalistic approaches because it allows us to describe the child's language on its own terms, not on the terms of formal linguistic theory. I pointed out in the initial chapter, however, that even though this approach might be sufficient for the initial stages of language acquisition, generative

grammarians could still claim that it is inadequate for explaining more complex language later in ontogeny. I do in fact conclude from the current analyses that the Cognitive Linguistics approach is sufficient to account for the language acquisition of 2-year-olds. And so the question of later development arises.

Using the Cognitive Linguistics approach I have outlined here, the major development toward systematicity after 2 years of age is the growing abstractness and complexity of the linguistic elements that the child combines with her symbolic integration operations and marks with her syntactic devices. First of all, soon after their second birthdays children begin to construct relatively abstract syntagmatic categories, such as agent and patient, and more abstract paradigmatic categories, such as noun and verb, that make for more schematic and general symbolic structures. What is combined and marked is therefore more abstract, leading to the ability to immediately place a novel word heard in one linguistic context into other contexts in a conventional manner. Second and in addition, as development proceeds, the child learns to use as items in her symbolic integration operations not just abstract categories, but multisymbol phrases that operate as a single unit, for example, prepositional phrases and noun phrases. The ability to fill syntagmatic slots with complex linguistic material leads quite naturally to such things as subordinating constructions and recursive sentences.

Other developments after the 2nd year involve a variety of specialized "transformational" structures such as, in English, questions and passive sentences. I do not believe that, in T's language at least, these were derived or systematically related via movement rules from simple declarative sentences or any other linguistic forms. Most obviously, T's first *wh*-questions preceded any other of her sentence forms: She asked "Whereda _____?" as her first multiword sentences, and she also asked "Whats-that?" quite early as well. Also, T's later *wh*-questions were tied to specific verbs, suggesting once again some less than generalized movement rules. Overall, I see no reason to posit anything other than the fact that T was learning how to construct these questions in conventional adult form, given that one must begin the sentence with a *wh*-word and proceed from there in adultlike ways (cf. MacWhinney, 1977; Schank, 1980).

This very general account is of no help, of course, in the specifics of why particular structures in particular languages work the way they do. For explanations on this level, one must penetrate into the particular conventions of particular expressions, especially verbs. For current purposes I can only refer very generally to the work of cognitive linguists who work at such a level of specificity, for example: Lakoff's (1987) analysis of *there* constructions; Langacker's (1990) account of transitivity;

van Valin's (1991) analysis of question formation; Wierzbicka's (1988) account of complement constructions; Hopper and Thompson's (1984) account of the discourse bases of grammatical classes such as noun and verb; Fillmore, Kaye and O'Conner's (1988) analysis of *let alone* constructions; and Givón's (1979) analysis of a variety of discourse phenomena. Whether my account of the language of 2-year-olds and the specific accounts of cognitive linguistics concerned with the complexities of adult grammar can be developmentally linked is a very important question for future research.

9.4. Conclusion

I began this monograph by expressing my preference for a Cognitive Linguistics approach. I gave two reasons. First, it allows us to make connections between language acquisition and other areas of cognitive development. I believe that the current study has made important progress in this direction by explicating the foundational nature of event structures and cultural learning in the language acquisition process. These are both very general cognitive processes – so general they even allow for some direct comparisons to chimpanzee communication. This is not to say that language does not display some domain-specific structures; it surely does. But many cultural products (e.g., chess) display unique structures as well without, presumably, the involvement of innate and dedicated cognitive modules. As Bates et al. (1991) argue, uniqueness in product does not necessarily imply uniqueness of process. Language specific structures of the type studied by linguists arise when general cognitive capacities operate in the domain of communicative symbols, especially when they are used syntactically to express complex nonlinear ideas in the linear channel provided by the human vocal–auditory apparatus (Lieberman, 1985). Thus the symbolic integration operations T used to construct her early sentences were clearly not used in precisely that form in any other cognitive domain. But neither were these operations unrelated to the cognitive operations she engaged in when constructing complex objects or play sequences.

The second reason for a Cognitive Linguistics approach is that it is more congenial to developmental analyses. I take it as a distinct advantage that the current proposal is developmental in a way that formalistic (learnability) proposals are not. It is developmental, first of all, in the sense that it is couched in terms of the child's own cognitive structures at the particular developmental level involved. These may change during ontogeny in very fundamental ways. Moreover, the current account is also developmental in the sense that each step in the language acquisition process depends crucially on previous steps. It is not until the child has

produced or comprehended a number of sentences with a particular verb that she can construct a syntagmatic category of cutter, for example. Not until she has done this with a number of verbs can she construct the more general syntagmatic category of agent or actor. Not until the child has constructed a number of sentences in which various words serve as various types of arguments for various predicates can she construct word classes such as noun and verb. Not until the child has constructed sentences with these more general categories can certain types of complex sentences be produced. In short, the current model is developmental not just in the sense that the steps are consistently ordered but in the sense that certain operations use as raw material structures that themselves have a constructional history depending on still other structures. This is the meaning of the term *epigenesis*. And it is my belief that epigenetic processes are sufficient to bridge the gap between the current analysis of 2-year-old language and the language of adults – without resorting to innate linguistic knowledge or to formal representations other than those based on developmentally appropriate cognitive and social–cognitive skills and structures.

No one may claim certainty about these difficult issues. However, in my opinion – in opposition to that of many current child language researchers – a *rapprochement* between more formalistic and more psychologically and cognitively based approaches to language is neither possible nor desirable; they are two very different ways of viewing human behavior. Formal approaches attempt to assimilate the language practices of all cultures at all times, and all children at all developmental periods, to one highly abstract analytic scheme. Although, like etic approaches in general, this can be done, we must ask what the cost is in important detail. The more emic approaches of Cognitive Linguistics and developmental psychology in contrast revel in the details and idiosyncrasies of language use; they are attempts to understand languages more from the point of view of those who are using them. As a result, they may appear, and indeed may be, less rigorously specifiable than generative approaches, a disadvantage to some theorists, perhaps. The overriding advantage, however, is that from the perspective of Cognitive Linguistics we may at least take aim at a unified theory of human cognition in which language acquisition is both a result of, and a contributor to, more basic processes of psychological evolution and development.

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Appendix

This appendix was compiled in the following way. Handwritten diary entries – each consisting of a child utterance, its date of use, and a brief contextual note – were entered into a computer file. The Key Word And Line (KWAL) program from the CHILDES system was then used to search for the entries containing each verb. The verbs involved were mostly known from previous hand-done analyses and compilations. A running file was kept consisting of all of those entries that were not extracted by means of the verb-by-verb search. These were then compiled and categorized by hand. After all of this was accomplished, the five video and five audio transcripts were then searched by hand and added to the listings for the appropriate verbs and structures. The complex structures reported in chapter 6 were compiled by hand.

Details of how the diary was kept may be found in chapter 3. In general, the earlier months are more thorough and the later months are more selective, based on the criterion of “emergent structure” (recording the child’s most complex productions), with an explicit change along these lines at around 20 months. This means that as T started using a verb in a more sophisticated way, less sophisticated ways would start being ignored. (N.B.: all video and audio examples are reported without using this criterion.) Notes on parental usage are fairly reliable in the early months, become less so in the later months, and are non-existent in the last months. The organization of the appendix parallels exactly the organization of chapter 4, 5, and 6.

A word about the entries themselves. I have resisted almost totally the urge to edit or otherwise change diary entries to make them more readable and consistent – even in the face of the editor’s pleas. In some cases I am almost certain I could make them more comprehensible by adding information I believe to be true; but these would be in all cases reconstructions some 15 years after the fact. I have even left alone the various spellings of Mama, Mommy, Dada, Daddy, and so forth, just as they were written (the editor did correct a few of my own misspellings). There is some value, I believe, to leaving the entries just as they were recorded, with all of their imperfections. The one exception is that when an entry contains a first person pronoun (*I, me, my*) to refer to the recorder of the entry I have placed in parentheses the person referred to (usually determined by the handwriting in the diary itself); *us* always refers to T’s parents.

CHAPTER 4. CHANGE OF STATE VERBS*4.1. Presence, absence, and recurrence of objects***WHERE**

Parent Use: (a) "Where's the bottle?" as hunting for it; (b) "Where's the _____?" or "Where'd it go?" in games of peekaboo

Single-Word Use:

- 15.29 WHERE-GO – *hiding her hands in game*
- 15.29 WHERE-GO – *a dog leaves suddenly*
- 16.00 WHERE-GO – *a movie is over (screen goes blank)*
- 16.00 WHERE-GO – *as she hides object under covers*

Use in Combination:

- 15.20 WHEREDA BOTTLE – *looking for and demanding it (many instances over next weeks)*
- 15.29 WHEREDA BALL – *in game of peek-a-boo*
- 16.00 WHEREDA SPOON – *searching, no discernible reminder*
- 16.00 WHEREDA PICTURE – *searching, no discernible reminder*
- 16.03 WHEREDA DADDA – *in game of peek-a-boo*
- 16.11 WHEREDA MAMA – *in game of peek-a-boo*
- 16.13 WHEREDA PETE – *looking for dog we were calling*
- 16.20 WHEREDA MARIA – *looking out window for her friend*
- 16.24 WHEREDA FLOWER – *to an empty bush (she had picked flowers there before)*
- V16.25 WHERE SPOON – *looking for it (five times)*
- V16.25 WHERE SPOON – *looking for it (played with earlier)*
- V16.25 WHERE BOWL – *looking for it after had spoon (three times)*
- V16.25 WHERE BABY – *wants to see self in video monitor*
- V16.25 WHERE CUP – *mama suggests she make her baby dinner*
- V16.25 WHERE APPLE – *looking for book called "apple" (two times)*
- V16.25 WHERE BUNNY – *looking for its picture on bottom of cup (three times)*
- V16.25 WHERE CAR – *mama asks if a picture is a car*
- V16.25 WHERE BOTTLE – *mama asks what's in the bag (where bottle usually is)*
- V16.25 WHERE DOG – *looking in book for familiar picture (two times)*
- V16.25 WHERE FIRE – *looking in book for familiar picture (two times)*
- V16.25 WHERE'S WATER – *looking in cup*
- 16.28 WHERE BOOK – *after parent suggests reading*
- 16.29 WHERE PICTURE – *looking for picture of person whose name she heard spoken*
- 17.05 WHERE STUCK – *looking through book for picture of man stuck*
- V17.26 WHERE SHOES – *searching after Mama asks where they are*
- V17.26 WHERE PETE – *as Daddy gets out Pete's ball (usually throws for him – the dog)*
- V17.26 WHERE'S BABY – *has bowl and spoon, wants to feed baby-doll*
- V17.26 WHERE CRACKER – *drinking juice, knows we brought crackers*
- V17.26 WHERE BABY – *wants to see self in video monitor*

- V17.26 WHERE HAIR – *she had just eaten off cookie man's hair*
 V17.26 WHERE'S TOWEL – *needs one to clean up mess*
 V17.26 WHERE _____ – *eight examples of asking where a person is (e.g., she asks "where Lulu" and adult replies "in Florida," etc.)*
 A17.26 WHERE _____ – *three examples of names games (see immediately preceding)*
 A17.26 WHERE MOMMY – *asking about Mommy still in bed (two times)*
 V18.25 WHERE CAKE – *she is told to look in box for cake, but she can't find it*
 V18.25 WHERE SPOON – *she has bowl, needs spoon to play dinner*
 V18.25 WHERE CAKE – *searching, no obvious reminder*
 A18.26 WHERE _____ – *three examples of names game*
 A18.26 WHERE DOG – *looking back out window where she just saw dog seconds before (two times)*
 V23.00 WHERE'S THE SPOON – *looking for it*
 V23.00 WHERE THE KEYS – *looking for them (two times)*
 V23.00 WHERE'S THE KEYS – *looking for them (two times)*
 V23.00 WHERE IS TRAVIS – *looking in TV monitor*
 V23.00 WHERE ARE YOU – *looking for Daddy*
 A23.00 WHERE'S MY BOTTLE – *after being told to drink from cup (two times)*

FIND

Parent Use: Often, when T asks "where" question and they don't know

Single-Word Use: "Find-it" when referent is clear from context

- V17.26 FIND-IT – *she asks where cracker is, Mama tells her, she looks but can't find it*
 V18.25 FIND-IT – *trying to find toy in box*

Use in Combination:

- 17.26 FIND-IT FUNNY – *closed book, opens and looks for "funny"*
 17.28 FIND-IT BIRD – *had turned past bird in book*
 18.02 FIND-IT CHESS – *looking through book*
 18.03 FIND-IT BRICK – *looking for, just played with it*
 18.08 FIND-IT WEEZER – *heard meow, looking for*
 18.16 FIND DUCKS – *looking around pond*
 18.28 FIND-IT BALL – *she wants to (wants me to hide it)*
 19.03 FIND THE STICK – *stick in popsicle, pulling away ice*
 19.22 FIND DANNY – *wants to (looking in cabinet)*
 19.24 MORE FIND LULU – *"find Lulu" is a game with picture book*
 V23.00 COME FIND ME – *playing hide-and-peek*
 V23.00 I FOUND IT – *as she found chalk she had been looking for*

NO (unexpected absence only)

Parent Use: in button-button and other hiding games when T looks and it's not there, parents say "Noo. It's not there"

Single-Word Use: when she looks for something, expecting to find it, but does not

- 15.26 NO – *in game of button-button (numerous occasions)*

- 15.27 NO – *told doll was on bed, she couldn't find it*
- 15.27 NO – *a dog refused a biscuit she offered it*
- 16.02 NO – *picks up and shakes empty bottle*
- 17.11 BOTTLE...NO – *looking under table for bottle, not finding it*

Use in Combination:

- 17.16 NO BOY – *looking through book for boy picture*
- 18.13 NO MONKEY – *looking through book for monkey picture*

GONE

Parent Use: (a) to answer her “where” questions; (b) telling her that there is no more food, an object can't be found, a person will not return, etc.

Single-Word Use: (a) answer where questions (even her own); (b) food finished (doesn't want more); (c) she or other makes object disappear

- 16.18 GONE – *inspecting Mama's empty glass (Mama had just finished milk)*
- 16.23 GONE – *pouring water out of bottle*
- 16.24 GONE – *after she ate bite of food*
- 16.24 GONE – *after she gave Daddy bite of food*
- V16.25 GONE – *asking where dog picture is, failing to find it*
- V16.25 GONE – *as she finishes eating cookie*
- V16.25 GONE – *as she finishes drink (two times)*
- 17.00 GONE – *as person leaves (usually “bye”)*
- 17.07 GONE – *looking for cherries, answering own “where” question*
- 17.07 BALL...GONE – *a sand ball dissolves on the beach*
- 17.11 JELLY...GET-IT...GONE – *asking for it, receiving empty jar, commenting on it*
- V17.26 HAND...GONE – *having bitten off cookie man's hand*
- V17.26 GONE. GONE...MESS – *she knocked down blocks, Maria asked her what it was now*
- A19.27 GONE – *turning page of book and commenting on previous page*
- V23.00 THE CHALK GONE – *she can't find it*

Use in Combination:

- 17.26 PETER PAN GONE – *after closing book*
- 18.06 RAISINS GONE – *finds and looks into empty raisin box*
- 18.11 DOO-DOO GONE – *Mama changed diaper and threw it away*
- 18.27 CHERRY GONE – *she ate them all*
- 18.27 FOX GONE – *closing book*
- 18.27 HAMMER GONE – *Mama put up hammer*
- 18.29 FRENCH FRIES GONE – *ate them all*
- 18.29 STU GONE – *he left*
- 19.01 CREME-SANDWICH GONE – *she finished it*
- 19.03 CRACKERS GONE – *throwing package away*
- 19.04 BUBBLES GONE – *popped*
- 19.05 SALAD GONE – *empty bowl of salad*
- 19.13 FEATHER GONE – *she had been playing with it, lost it*

- 19.15 DANNY GONE – *he left while she wasn't looking*
- 19.16 BALL GONE...GET-IT...GET-IT BALL – *ball rolls away, she chases, gets it (throws and gets)*
- 19.16 FEATHER GONE – *Mama put it away*
- 19.16 MOOSE GONE – *can't find her moose book, had it earlier*
- 19.16 MUSIC GONE – *music box stopped*
- 19.16 SCREWDRIVER GONE – *it was in room, can't find it*
- 19.17 POKER GONE – *looked out window at Poker, turned away, looked out again and gone*
- 19.18 BACON GONE – *she doesn't have any on her plate (mine)*
- 19.18 BRUSH GONE – *she puts it inside book and closes*
- 19.18 DADDY GONE – *looking in room (I was there, now gone)*
- 19.18 MONEY GONE – *was playing with it, can't find it*
- 19.19 CAROL GONE – *left car*
- 19.19 RING GONE – *dropped it a few minutes earlier*
- 19.20 BUG GONE – *she looked away and back, it was gone*
- 19.20 JELLO GONE – *empty cup (she finished Jello 5 minutes earlier)*
- 19.20 WEEZER GONE – *left room (she didn't see)*
- 19.22 CANE GONE – *she had been playing with it, lost it*
- 19.23 CRACK GONE...UNDER MOMMY – *mama is lying on crack in playpen*
- 19.23 MARIA GONE – *she was in sight, T looked away, looked back, gone*
- 19.23 TYSON PAPER GONE – *it's not in its box*
- 19.24 ADAM GONE – *here, she looks away, gone*
- 19.24 BOX GONE – *toy usually in box, not by itself*
- 19.24 GROVER GONE – *she can't find him*
- 19.24 DANNY'S GONE – *here, she looks away, gone*
- 19.25 WEEZER GONE – *she cannot find him*
- V19.26 COKE GONE – *finding an empty cup*
- 19.27 COFFEE GONE – *looked away, I took it*
- 19.28 PEAS GONE – *they are (bowl of soup)*
- 19.30 CHARLIE WEAVER GONE – *on TV*
- 20.00 BLUE TRUCK GONE... DADDY TAKE IT – *statement, then response to question "where did it go"*
- 20.00 NEW PICTURES GONE – *she can't find them (we had been looking at them, I put them away)*
- 20.00 TENNIS GONE – *she can't find it (racket)*
- 20.01 GIRL GONE – *I put her doll up*
- 20.01 NAIL GONE – *missing from monkey bars*
- 20.02 NECKLACE GONE – *she lost it*
- 20.04 ICE-CREAM-SANDWICH GONE A BOWL – *wrapper in bowl*
- 20.05 FUNNY MAN GONE – *man on TV is off*

ALL-GONE

Parent Use: "It's all gone"

Single-Word Use: mainly when food finished

17.25 ALL-GONE – *she finished her bologna and turned plate upside down*

Use in Combination:

18.26 ALL-GONE ERNIE–BERT – *after TV show over*

19.09 ALL-GONE JUICE – *to empty cup*

MORE

Parent Use: when T finished with something (usually food), ask: “Do you want some more?”

Single-Word Use: mostly to request more food (numerous examples in notes)

16.14 MORE – *refilling dog’s water bowl (or, since struggling, perhaps asking Mother to)*

V19.26 MORE – *giving doll more food*

V19.26 MORE – *as she begins to draw again (after pause)*

Use in Combination:

17.09 MORE CORN – *handing me bowl (ice cream), asking*

17.16 MORE THAT – *wants more ice cream*

17.23 MORE CHIPS – *after leading Mama to kitchen (hours previous)*

17.25 MORE COKE – *had finished some, wants more*

A17.26 MORE EGGS – *she finished, wants more (two examples)*

17.27 MORE MOUTH – *pretending to feed Mama, then again*

18.02 MORE BOTTLE – *finished one, wants another*

18.02 MORE COOKIE – *cookies were out, I put them up, she hadn’t had any but requested more just the same*

18.02 MORE ICE-CREAM – *sees, wants some, finished, wants more*

18.07 MORE APPLE – *finished one, wants more*

18.07 MORE HOT DOG – *finished one, wants more*

18.07 MORE MATCHES – *wants to play match game. She had played it before*

18.08 MORE BIRDSEED – *had eaten some, wants more*

18.08 MORE JELLY – *she’s eaten the jelly off her toast, wants more*

18.11 MORE MAIL – *mailman is coming (only mail before had been 24 hours)*

18.13 MORE BERRIES – *had eaten some, wants more*

18.14 MORE POTATO CHIPS – *finished some, wants more*

18.15 MORE DIRT – *washing dirt off hands, doesn’t get it all the first time, Mama washes again*

18.15 MORE WATER MORE DIRT – *washing dirt off hands, doesn’t get it all the first time, Mama washes again*

18.24 MORE JUMP – *asking to jump again*

A18.25 MORE BALLS – *finding a second picture of balls in a book (two examples)*

A18.25 MORE FISH – *finding a second picture of fish in book (two examples)*

A18.25 MORE EGGS – *picture with two eggs in it, pointing out second*

A18.25 MORE BOOK – *wants Daddy to read again (two examples)*

A18.25 MORE BOOKS – *wants Daddy to read again*

18.25 MORE RAISINS – *ate some, wants more*

- 18.27 MORE SAND – *as she pours more sand in a bowl*
 18.29 MORE BALLS – *second page in a row with balls*
 18.29 MORE BOOK – *read one, wants another*
 18.29 MORE FISH – *two fish, pointing to second one*
 18.29 MORE POPSICLE – *finished one, wants more*
 18.30 MORE CREAM – *lotion squirted in hand (had some)*
 18.30 MORE ICE – *wants another piece*
 19.00 MORE HAMBURGER – *I brought her more*
 19.00 MORE PICTURES – *had been looking at album, wants to again*
 19.01 MORE CROUTONS – *had some, wants more*
 19.02 MORE BACON – *I gave her one piece, wants another*
 19.02 MORE BEER – *had some, wants more*
 19.02 MORE CRACKER – *wants another one*
 19.02 MORE DIAPERS – *just after I took them off*
 19.02 MORE SYRUP – *wants more on pancakes*
 19.03 MORE CRACKER – *wants another*
 19.03 MORE KETCHUP – *wants more, had some*
 19.03 MORE WATER – *filling bowl again, playing*
 19.04 MORE ORANGE – *juice, finished bottle, wants more*
 19.05 MORE TOWEL – *wants to clean again*
 19.07 MORE SOAP – *spooning soap bubbles (second spoon)*
 19.08 MORE BATH – *when being taken out*
 19.08 MORE SWIMMING – *wants to go back*
 19.09 MORE PEE-PEE – *sits on potty again, wants to*
 19.15 MORE PEANUT – *had one, wants another*
 19.16 MORE BREAD – *wants more (had one)*
 19.16 MORE GRASS... EAT-IT GRASS – *had been eating grass, then more*
 19.17 MORE RING – *apple rings (she wants to hold and more)*
 19.21 MORE FEATHERS – *wants to go find more*
 19.21 MORE STEAK – *wants more*
 19.22 HERE THE MORE CRAYONS – *picked up one, and said “crayon”; another and said, “more crayons”; then says to Mama*
 19.22 MORE CYCLE-MAN – *saw one on TV, wants another*
 19.23 MORE ORANGE POPSICLE – *request*
 19.24 LINDA HAVE-IT MORE CREAM – *she'd been told we have no more ice cream (Linda gave her some days before)*
 19.24 MORE BAGEL – *had some, wants more*
 19.24 MORE FIND LULU – *“find Lulu” is a game with picture book*
 19.24 MORE PIECE-OF-ICE – *ate some, wants more*
 V19.26 MORE SOME... MORE, GROVER – *giving more food to dolls*
 V19.26 MORE PEE-PEE – *telling Daddy she needs to again*
 V19.26 MORE TRIANGLE... MORE TRIANGLE – *asking for another to be drawn, then commenting when complete*
 V19.26 MORE BALLOONS – *drawing more*
 A19.27 MORE JELLY – *Daddy put some on her toast, she wants additional*
 A19.27 MORE JELLY – *T had eaten it all off, wants it replaced*

- A19.27 MORE MUSIC – *as record finished, wants more (two times)*
 A19.27 HELP . . . MORE HELP – *Daddy had helped her with her eggs, she wants more help*
 19.27 MORE HELP – *wants help*
 19.27 MORE YOGA – *in book, wants to see picture again*
 19.28 MORE BUSHES – *swings into them*
 19.29 MORE PIECE-OF-ICE – *had one, wants more*
 20.00 MORE PENGUINS – *just learned word, more came on TV*
 20.01 SOME MORE WEEZER CHERRIES – *wants more (Weezer eating)*
 20.02 MORE HAND – *wants more fries in her hand*
 20.03 MORE PETE WATER – *putting more in Pete’s bowl*
 20.03 MORE TWINKLE – *wants song sung again*
 20.08 MORE JELLY TOAST – *wants more on toast*
 20.16 GOT MORE – *telling Mama that I just gave her more*
 20.21 NEED MORE JELLO – *wants more*
 21.27 GO SEVEN-ELEVEN BUY MORE COCA-COLA – *wants to*
 22.03 HAVE MORE AGAIN – *cereal*
 22.04 TAKE MORE FIRST – *she wants to, before we put food up*

ANOTHER (+ OTHER)

Parent Use: no notes

Single-Word Use:

- 20–24: ANOTHER – *to request “countable items” such as marbles, acorns, buttons. Form is sometimes “another-one”*

Use in Combination:

- 20.05 THIS ONE OTHER FUNNY MAN – *other man on TV*
 20.06 GET-IT ANOTHER ONE – *picking up another chess piece*
 20.08 WASH THE OTHER EAR – *asking to*
 21.26 OTHER BIRD IN THE BUSH – *commenting*

HI

Parent Use: greeting T and other people

Single-Word Use: greeting people and pets

- V17.26 HI – *greeting Daddy as he approaches with juice*
 V19.26 HI – *answering phone*

Use in Combination:

- 17.01 HI FAN – *entering and exiting room with fan*
 17.01 HI PLANE – *as plane comes in and out of sight*
 17.06 HI PETE – *greeting*
 17.09 HI MOOSE – *to picture in book*
 17.10 HI OTTER . . . BYE-BYE – *picture in book, finding then turning page*
 17.15 HI SAND – *scooping, then pouring sand*
 17.22 HI CHRIS – *greeting*
 17.22 HI MOMMY – *greeting*
 17.24 HI MARIA – *greeting*

- 17.24 HI RABBIT – *to picture*
 18.08 HI KITTY – *immediately after previous statement*
 18.08 HI WEEZER – *seeing him (cat)*
 18.11 HI DANNY – *as he approaches*
 18.11 HI DANNY – *Danny approaching*
 18.11 HI MARIA – *as she approaches*
 18.11 HI MOMMY – *T entering room*
 18.12 HI LAURA – *T entering room*
 18.12 HI PETE – *T entering room*
 18.13 HI LION – *as she opens book to picture*
 18.15 HI CHRIS – *as she sees her out window*
 18.15 HI LINDA – *as she sees her out window*
 18.25 HI GRAPES – *at grocery store*
 V18.25 HI DADDY – *as he approaches*
 A18.25 HI PETE – *greeting pet out window*
 A18.25 HI POKER – *greeting pet out window*
 A18.25 HI WEEZER – *greeting pet out window*
 A18.25 HI TAPE – *“greeting” tape inside tape recorder*
 A18.25 HI DADDY – *running back to Daddy*
 19.04 HI BUBBLES – *as Mama blows one*
 19.16 HI POKER... UNDER CAR... POKER UNDER CAR – *crawling under car after Poker (cat)*
 V19.26 HI MOMMY – *as approaches (two times)*
 V19.26 HI LINDA – *pretending on phone*
 A19.27 HI WEEZER – *to cat in tree out window (three times)*
 19.28 HI WIND – *gust*
 20.07 HI MIRROR... PANTS OFF... ON – *trying on clothes*

BYE

Parent Use: telling T and others good-bye; sometimes to inanimate objects (e.g., “Tell the swimming pool good-bye” as a way of telling T an activity was over)

Single-Word Use: telling people or things good-bye

- V16.25 BYE – *as she leaves parent (eight times)*
 A17.26 BYE – *as she leaves room (two times)*

Use in Combination:

- 16.26 BYE BABY – *to mirror (as leaving)*
 16.26 BYE CANE – *throwing it down*
 16.26 BYE EYES – *turning doll over*
 16.26 BYE MAN – *TV program over*
 16.26 BYE OUTSIDE – *coming inside*
 17.01 BYE CHIPS – *Daddy cleaning plates*
 17.01 BYE FAN – *entering and exiting room with fan*
 17.01 BYE FLOWERS – *looking, drops hand, keeps hold of it*
 17.01 BYE PLANE – *as plane comes in and out of sight*
 17.02 BYE BIRD – *bird flies away*

- 17.02 BYE BRICK – *walking away after playing with it*
 17.02 BYE SWIMPOOL – *as we were leaving lake*
 17.04 BYE CANDY – *(candy = gold tooth) as I close my mouth*
 17.04 BYE DADA – *throwing picture*
 17.04 BYE MONEY – *throwing coin*
 17.04 BYE TOAST – *plates being taken away*
 17.05 BYE MAN – *picture in book*
 17.05 SHARP...BYE SHARP – *opens book to staples, feels it, closes it*
 17.06 BYE BOY – *picture in book, closing*
 17.06 BYE DINNER – *(pretend) putting top on pot*
 17.06 BYE GIRL – *picture in book, closing*
 17.06 BYE HAND – *closed her hand on a nut*
 17.07 BYE BALL – *popping bubble*
 17.07 BYE BEARD – *as walking away*
 17.08 BYE BACON – *then eats it*
 17.08 BYE SWIM-POOL – *looking, looking away*
 17.08 BYE WATER – *looking, then looking away*
 17.09 BYE BUG – *as bug washes down sink*
 17.09 BYE DOO-DOO – *flushing toilet*
 17.09 BYE FAN – *I quit swinging a chain*
 17.09 BYE-BYE CUTE – *taking off cute (hairband)*
 17.09 BYE-BYE THUNDER – *after thunderclap*
 17.10 BYE CANDLE – *closing book*
 17.10 BYE-BYE CAR – *as car pulls away*
 17.10 HI OTTER...BYE-BYE – *picture in book*
 17.11 BYE BOOK – *throwing it down*
 17.11 BYE BUTTER – *imitated butter (doesn't know the word)*
 17.11 BYE HAT – *as she walks away*
 17.11 BYE-BYE CAR – *passing in car*
 17.11 BYE-BYE HIPPO – *closing book*
 17.11 BYE-BYE PRETTY – *Mama saying pretty to flowers. Car left flowers*
 17.11 BYE-BYE SPIDER – *song (named spider) over*
 17.13 BYE-BYE ROCKS – *throwing rocks*
 17.13 BYE-BYE SAND – *pouring sand from bucket*
 17.14 BYE-BYE GOAT – *looking in book, turning page*
 17.14 BYE-BYE LIGHT – *as we went under traffic light*
 17.14 BYE-BYE PAUL – *as he's leaving*
 17.14 BYE-BYE PIG – *looking in book, turning page*
 17.14 BYE-BYE THAT – *she asked "whatzat" – no answer – we leave*
 17.15 BYE SAND – *scooping, then pouring sand*
 17.15 BYE-BYE KITTY – *leaving room (cat on shelf)*
 17.15 BYE-BYE MOUSE – *picture in book, closes*
 17.17 BYE SWIM-POOL – *no pools or pictures in sight*
 17.17 BYE-BYE MARIA – *Maria leaving*
 17.18 BYE-BYE BUNNY – *leaving house, bunny had been on TV*
 17.19 BYE MAN – *zoom out of man on TV*
 17.19 BYE-BYE TEETH – *to her toothbrush (she had to leave it inside)*

- 17.20 BYE-BYE HORSIE – *horse leaves TV*
 17.20 BYE-BYE MIKE – *to Mike leaving*
 17.21 BYE-BYE KITTY – *to a kitty as she's leaving*
 17.24 BYE DANNY – *leaving in car*
 17.24 BYE MARIA – *leaving*
 17.24 BYE-BYE BIRD – *closing book*
 17.25 BYE-BYE BIKE – *leaving bike in driveway*
 17.26 BYE-BYE BIRD – *driving by in car*
 V17.26 BYE-BYE HORSIES – *playing with and leaving them*
 17.27 BYE PETER PAN – *no obvious referent*
 18.01 BYE WATER – *pouring from bowl*
 18.03 BYE-BYE ZOO-ZOO – *to TV show going off*
 18.04 BYE ERNIE-BURT – *show going off*
 18.04 BYE SHOES – *no obvious referent (driving in car)*
 18.05 BYE KITTY – *kitty is leaving*
 18.07 BYE-BYE APPLE – *leaving kitchen (and apple)*
 18.08 BYE WEEZER – *as he leaves*
 18.09 BYE WATER – *as water goes down drain*
 18.11 BYE DOO-DOO – *with previous, Mama changed diapers and threw it away*
 18.14 BYE RING – *putting it in her mouth (walking out the door)*
 18.17 BYE-BYE TRUCK – *truck leaves*
 18.22 BYE-BYE GREEN JEANS – *TV program going off*
 18.26 BYE-BYE ERNIE-BERT – *TV show going off*
 18.30 BYE-BYE DADDY'S CAR – *leaving*
 19.29 BYE MASK – *leaving mask*
 20.00 DADDY BYE-BYE TOO – *as he is leaving*

MORNING

Parent Use: to wake T or greet her in the morning

Single-Word Use:

V16.25 MORNING – *as she wakes from playing night-night*

V17.26 MORNING – *waking doll from night-night*

A19.27 MORNING – *pretending to wake up*

Use in Combination (all are address only):

18.11 MORNING, WEEZER – *to cat*

18.22 MORNING, DADDY – *to Daddy*

18.22 MORNING, MOMMY – *to Mommy*

ON and TURN-ON

(appearance/existence only)

Parent Use: for machines, lights, TV, etc.

Single-Word Use: for machines, lights, TV, etc. (18–19 months)

Use in Combination:

19.02 LIGHT ON – *reflector*

- 19.09 ON THE LIGHT – *request to turn it on*
- 19.10 SQUARES ON – *Hollywood Squares on TV*
- 19.16 LIGHT ON – *wants it on (night-light in her hand)*
- 19.22 HOSE ON – *wants it on*
- 19.23 RABBIT ON THERE – *on TV*
- 19.26 ELEPHANTS ON THERE – *on TV*
- 19.26 SCARED MAN . . . SCARED MAN ON TV – *she is scared of a man on TV*
- 20.01 WATCH SQUARES ON THERE – *wants a specific TV program*
- 20.02 ON RASCALS – *request for TV show*
- 20.08 SCARED MONSTER ON TV – *telling Mama she is*
- 20.09 ALL THESE LIGHTS ON – *inside car, they are*
- 20.09 PAUL LIGHT ON – *wants it on (his car)*
- 21.01 I WILL TURN ON TV CAPTAIN BOOK – *telling us*
- 21.01 TURN THAT BUNNY LIGHT ON – *wants me to*
- 21.18 PUT MOTHER GOOSE ON – *wants this record on*
- 21.27 AFTER JOE LAND LOST BE ON – *two successive TV shows*
- 22.03 I CAN'T SEE . . . TURN LIGHT ON – *telling me*

OFF and TURN-OFF

(appearance/existence only)

Parent Use: for machines, lights, TV, etc.

Single-Word Use: for machines, lights, TV, etc. (18–19 months)

Use in Combination:

- 18.22 LIGHT OFF – *imitated, then used creatively*
- 18.27 LIGHT OFF – *as turning off light*
- 18.30 OFF TV – *wants it off*
- A23.00 TURN IT OFF – *record player*
- A23.00 TURN THE LIGHT OFF – *request to Daddy*
- A23.00 TURN LIGHT OFF – *request to Daddy*

GO-AWAY

Parent Use: mostly her friend Maria telling her at the chalkboard to make a picture go-away (by erasing it)

Single-Word Use: none

Use in Combination:

- V19.26 PICTURE GO-AWAY – *as erasing various pictures (43 times)*
- V19.26 KITTY GO-AWAY – *erasing kitty picture*
- V19.26 WAGON GO-AWAY – *erasing wagon picture*
- V19.26 TWO BALLOONS GO-AWAY – *erasing them*
- V19.26 GO-AWAY HERE – *erasing a picture*

MAKE

Parent Use: mostly in block games, early on. Later, making a variety of things

Single-Word Use: mostly with blocks. (16–17 months)

V16.25 MAKE – *wants blocks stacked (nine times)*

Use in Combination:

19.04 MAKE DOLL – *a doll Mama had sewn*

19.21 MOMMY MAKE A BUBBLE – *wants her to (balloon)*

19.22 MAKE DINNER – *bowl and water playing*

19.22 MAKE SOUP – *bowl and water, playing*

19.23 MAKE A NOISE – *wanting me (Daddy) to click a top (when you close it, it clicks)*

19.29 MAKE BIRTHDAY CAKE – *sandbox*

19.29 MAKE ONE – *cake in sandbox*

20.01 MAKE A HOUSE – *wants me to, sheet on table*

20.01 MAKE A THIS HOUSE – *wants Daddy to*

V23.00 IT MAKES A FUNNY NOISE – *toy*

MADE

Parent Use: “ _____ made that ”

Single-Word Use: none

Use in Combination:

A18.25 MARIA MADE – *about picture Maria drew (two times)*

A18.25 MOMMY MADE – *picture Mommy drew*

18.29 MARIA MADE THIS DUCK – *picture Maria drew earlier*

19.07 MARIA MADE BOOK – *looking at book Maria gave her*

19.09 LINDA MADE ICE – *ice Linda had given her*

19.09 LINDA MADE THAT DRESS – *dress given to her by Maria and Linda*

19.09 MARIA MADE THAT BOOK – *book Maria had given her*

19.10 DADDY MADE THIS – *a string of beads Daddy had made*

19.10 MOMMY MADE THIS PICTURES – *some drawing Mommy had made*

19.11 DANA MADE THIS BALLOON – *balloon Dana had given her*

19.12 DANA MADE THAT COLOR-BOOK – *Dana had given it to her*

19.12 DANA MADE THIS – *picture Dana drew day before*

19.12 MOMMY MADE THIS PICTURE – *a drawing of Mommy's*

19.12 LINDA MADE THIS SHIRT – *pointing to shirt Linda had made (she had been told this)*

19.16 MOMMY MADE THAT TABLE – *table Mommy had painted*

V19.26 MARIA MADE THIS TWO CATS – *picture on blackboard (two times)*

19.28 MADE-IT PIZZA – *a picture she had drawn*

20.01 DADDY MADE THIS NECKLACE – *after Daddy untangled it*

20.01 DANNY MADE THIS – *a shirt that looks like Danny's*

20.10 MAIL-BOX MADE THIS – *a doll that came by mail*

20.18 DADDY MADE THIS LIKE THIS – *drawing on top of Daddy's drawing*

20.18 MARIA MADE THIS REAL GOOD – *a drawing*

21.28 DANA MADE THAT – *no contextual note*

A23.00 MARK MADE THAT – *a picture (two times)*
 V23.00 I MADE . . . unintelligible–context ambiguous

4.2. *Presence, absence, and recurrence of activities*

AGAIN

Parent Use: “Do you want to _____ again?”

Single-Word Use:

- 17.01 AGAIN – *wants to be tickled again*
- 17.04 AGAIN – *wants to ride horsie again*
- 17.05 AGAIN – *wants to be thrown again*
- 17.06 AGAIN – *wants Daddy to give her another bite of jello*
- 17.07 AGAIN . . . BOOK – *wants to be read book again*
- 17.08 AGAIN – *wants Daddy to make horse noise again*
- 17.10 AGAIN – *wants to pour syrup (by herself) again*
- 17.12 AGAIN – *Mama gave her one chip, holds out hand wanting her to give her another*
- 17.12 AGAIN – *preparing to jump off table again*
- 17.18 AGAIN . . . WIND – *a gust of wind blowing leaves, a pause, another gust blowing leaves*
- V18.25 AGAIN – *wants Mama to staple paper again*
- V18.25 AGAIN – *wants Daddy to put toy back on top of box so she can knock it down again*
- V18.25 AGAIN – *Daddy lifts paper so she can see blackboard, she wants repetition*
- V18.25 AGAIN – *no known referent*

Use in Combination:

- 17.27 AGAIN FIRE – *wants me (Daddy) to let her blow out match again (usually say “burn”)*
- 18.07 AGAIN MATCHES – *wants to play match game (burn); she had played it about 1 hour before*
- 18.20 RIDE AGAIN – *asking to ride (first time of day)*
- 18.23 AGAIN BUBBLES – *wants to play it again*
- 19.01 AGAIN FEET – *wants foot game again*
- 19.18 READ THIS BOOK AGAIN – *request (just finished reading)*
- 22.03 HAVE MORE AGAIN – *cereal*
- 22.04 I SEE YOU UP THERE AGAIN – *Daddy is in the tree*

DO-IT

Parent Use: “Do you want to do it?”

Single-Word Use: request to do things (“Do-it”) (19–20 months)

Use in Combination:

- 19.11 WEEZER DID IT – *about spilled drink*
- 20.23 DO-IT SELF ME – *wants to undress herself*
- 21.01 I WILL DO THAT – *hang on monkey bars*

- 23.00 WHAT'S THAT DOING IN THERE – *question to Daddy about car*
 23.00 WHAT'S THAT CAR DOING IN THERE – *same situation*
 V23.00 I DID IT – *after finishing*
 V23.00 WHATCHA DOING? – *asking Daddy (three times)*
 V23.00 DO I GET COCA-COLA – *question to parents*
 V23.00 DOES IT GO, DADDY – *question about toy*
 24.00 WHAT _____ DO? – *animal noises game*

HELP

Parent Use: when T in a predicament: “Do you need help?”; acting afraid (especially in playing chase)

Single-Word Use:

- 16.15 HELP – *running from Daddy in game of chase*
 16.18 HELP – *as she was falling off couch*
 16.18 HELP – *needing help getting out of her car seat*
 16.21 HELP – *losing control of awkward pillow she was carrying*
 V18.25 HELP – *asking for help with her chair*

Use in Combination:

- 18.08 HELP A DOWN – *asking Mama to help down*
 A19.27 HELP . . . MORE HELP – *wants help with her food*
 20.01 HELP THIS WATER – *wants help with spigot*
 20.26 DADDY HELP ME WITH THIS – *needs help (to Mama)*
 21.02 COME HELP ME – *wants string, needs help getting it*

WITH-ME and WITH

Parent Use: as leaving: “Do you want to come with me?”

Single-Word Use:

- 19.04 WITH-ME – *wants to accompany Mama outside*
 19.12 WITH-ME – *wants to accompany Daddy in car*
 19.14 WITH-ME – *wants Mama to accompany her outside*

Use in Combination:

- 19.30 CARS WITH ME – *wanted to take toy cars inside house*
 20.01 PLAY WITH ME – *wants Mama to*
 20.03 PETE GO WITH ME GARBAGE-MAN – *Pete is chasing garbage man*
 20.24 COME WITH ME – *wants Maria to go with her*
 20.24 PLAY ON FLOOR . . . PLAY WITH BLOCKS – *wants what she says*
 20.24 PLAY WITH ME – *wants someone to play with her*
 20.26 DADDY HELP ME WITH THIS – *needs help (to Mama)*
 21.20 WATCH LAND LOST WITH ME – *wants me (Mama) to*
 V23.00 CAN I PLAY WITH THAT TOO? – *asking about toy*
 23.25 CLOUDS COMING WITH ME – *she's moving in car*
 23.25 CUT-IT WITH THE KNIFE – *while Mama is doing it*
 23.25 DOG AND KITTY COME WITH ME IN THE AIRPLANE – *request as she's nearing airport*

- 23.25 PETE COME WITH ME IN THE GROCERY STORE – *expresses desire as she goes in*
24.28 I WANT THE SHEETS WITH THE PINK SILK ON TOP OF THEM – *in answer to Mama's question about how she wants her bed*
24.28 I WANT TO DRAW WITH STU'S PEN – *I (Daddy) have it and she wants it*
24.28 IT'S FUN TO PLAY WITH PUZZLES – *doing it*

TOO

Parent Use: to invite T to join in “Do you want to do it too?” “You can do it too”

Single-Word Use: to request to join in with someone in activity (e.g., Mama on climbing bars) (19–20 months)

Use in Combination:

- 19.10 COME-IN TOO – *wants to come in as dog just did*
19.16 DRAW TOO – *wants to join Daddy*
19.24 DADDY STU BASKETBALL TOO – *wants to join in basketball game*
V19.26 BABY SOME TOO – *giving her doll some of her food*
V19.26 NINI TOO – *she joins Mama in pretend game*
V19.26 HAVE ONE TOO – *she is saying she does*
V19.26 USE IT ... USE IT TOO – *wants to use phone*
19.30 BIRTHDAY CAKE COME IN TOO – *wants to bring sand cake inside with her*
19.30 DADDY PEE-PEE TOO – *telling Daddy to join her*
20.00 DADDY BYE-BYE TOO – *as Daddy leaving, she wants to join*
20.00 DADDY COOKIE TOO – *offering one to Daddy*
20.00 DADDY OUTSIDE TOO – *commenting on Daddy joining others who have left room*
20.00 OPEN THIS ONE TOO – *wants a second umbrella opened*
20.01 UMBRELLA COMING TOO – *bringing it with her into playhouse*
20.04 BOTTLE COMING TOO – *asking to bring her bottle with her*
20.23 ONE ME TOO – *wants a piece of meat like Mommy has*
21.16 HAVE ONE TOO MYSELF, DADDY – *wants nuts like Daddy has*
V23.00 CAN I PLAY WITH THAT TOO? – *asking about toy*
V23.00 YOU WANT SOME TOO? – *asking Daddy (three times)*
V23.00 THAT'S A PAPER TOO – *comment*

TURN

Parent Use: “It's your turn”

Single-Word Use: to request that she be allowed to do something that another is currently doing (turn on bagswing, etc.)

Use in Combination:

- V19.26 NO ... TRAVIS TURN – *to suggestion that it is Maria's turn on phone*

NO (rejection/refusal only)

Parent Use: to restrain T or pets from forbidden activity

Single-Word Use and Use in Combination::

- 16.17 NO – *to herself as she spills her milk*
 16.17 NO – *to herself as she drops her toy*
 16.23 NO – *denying herself forbidden pen as she reaches for it*
 V16.25 NO – *telling self not to play with light cord*
 V16.25 NO – *Daddy wants to read her writing, she refuses*
 V16.25 NO – *rejecting offered object*
 V16.25 NO – *answering a question (2 times)*
 V16.25 NO – *refusing help*
 V16.25 NO – *refusing to answer question “what’s this?”*
 17.10 STEPS . . . NO – *doesn’t want Mama to leave via steps*
 V17.26 NO – *answering question*
 A17.26 NO – *answering question*
 V18.25 NO – *rejecting Daddy’s suggestion to play with something else*
 V18.25 NO – *rejecting Mama’s suggestion to “come here”*
 V18.25 NO – *rejecting Daddy’s suggestion to get clown out of box*
 V18.25 NO – *answering question*
 A18.26 NO – *refusing milk Daddy offers her*
 A18.26 NO – *answering question (3 times)*
 A18.26 NO – *refusing milk*
 V19.26 NO – *refusing milk (wants juice)*
 V19.26 NO – *rejecting offer to play with blanket*
 V19.26 NO – *answering question (93 times)*
 V19.26 NO – *rejecting suggestion (3 times)*
 V19.26 NO . . . HOLD-IT – *rejecting Mama’s suggestion to her to put her baby down*
 V19.26 NO . . . TRAVIS TURN – *rejecting Mama’s suggestion to let Maria have a turn*
 V19.26 NO – *rejecting a suggestion that she draw a picture*
 V19.26 NO, MARIA – *rejecting Maria’s attempts to assist her in drawing*
 21.08 NO, NOT LIKE THAT – *telling me not to play with toy the way I am*
 22.03 NO, MOMMY, WIPE MY BUTT OFF MYSELF – *wants to*
 23.00 NO, DRAW-IT BY SANTA CLAUS – *telling Mama where to draw her picture*

STOP

Parent Use: *telling T or dogs to cease doing something*

Single-Word Use and Use in Combination: *wanting person or dogs to quit tickling, brushing hair, wiping face, “bothering,” and so forth*

- 18.17 MOMMY, STOP – *wanting Mommy off a merry-go-round*
 18.19 MOMMY, STOP – *wanting Mommy to quit bothering her while she pretends to sleep*
 V18.25 STOP-IT – *wants Daddy to stop playing with her toy in the way he is and to do what she wants with it*
 18.29 MARIA, STOP-IT – *quit throwing water*
 18.29 STOP-IT BIKE – *wants Mama to quit pushing bike*

- 18.30 STOP-IT, MOMMY – *Mama playing with her hair*
19.05 STOP-IT, DADDY – *holding her back*
19.05 STOP-IT, DANNY – *in her way (playing with doll)*
19.07 STOP-IT MARIA WATER – *asking Maria to let her put her hands in bucket of water*
V19.26 STOP-IT, MOMMY – *Mommy trying to take cup from her*
19.27 STOP PUSH ME – *on swing*
19.28 STOP RAIN – *it's just started raining*

SELF

Parent Use: “Do you want to do it yourself?”

Single-Word Use: when she wants to be left alone to perform some activity by herself (e.g., puzzle) (19–20 months)

Use in Combination:

- 20.23 DO-IT SELF ME – *wants to undress herself*
21.16 HAVE ONE TOO MYSELF, DADDY – *wants nuts like Daddy has*
22.03 NO, MOMMY, WIPE BUTT OFF SELF – *telling Mommy*
22.07 TAKE IT OFF BY MYSELF – *when Daddy offers to help take her shoe off*
V23.00 GET IT BY MYSELF – *fending off Daddy*

LEAVE ALONE

Parent Use: to T or dogs “Leave that alone” or “Leave _____ alone”

Single-Word Use: none

Use in Combination:

- 20.27 LEAVE STU'S BEER ALONE – *telling herself*
20.27 NANNA LEAVE WEEZER ALONE – *telling dog*
20.27 STU LEAVE MOMMY'S COFFEE ALONE – *wants him to*
21.01 LEAVE ME ALONE... COOKING DINNER – *playing with Mama*
21.05 LEAVE THAT CUP ALONE – *order to Daddy*
21.10 LEAVE MOMMY'S PEN ALONE – *as I'm (Daddy) writing*
21.12 LEAVE MY TUMMY ALONE – *wants Mama to (tickling)*
21.13 LEAVE ME ALONE – *I'm (Mama) chasing her*
21.14 LEAVE MOMMY'S DRAWER ALONE – *telling me (Daddy) to*

LET-GO

Parent Use: to tell T to let go of things

Single-Word Use: to tell others to let go of her body or, especially, hand (e.g., to cross street)

Use in Combination:

- 21.16 LET-GO MY HAND – *telling Daddy to*

HUSH

Parent Use: telling dogs to quit barking

Single-Word Use: telling dogs to quit barking (20 months)

Use in Combination:

20.02 HUSH CINNAMON – *telling dog to quit barking*

20.02 HUSH DOG – *telling dog to quit barking*

20.02 HUSH PETE – *telling dog to quit barking*

WAIT

Parent Use: telling T or dogs to wait (especially exiting car or crossing street)

Single-Word Use: telling dogs or people to cease from moving

20.00 WAIT, DADDY, GOT THE GUIDE – *telling him not to leave in car without her*

Use in Combination: none

FINISHED

Parent Use: asking about toilet and other activities “Are you finished?”

Single-Word Use and Use in Combination: telling parents she is finished with an activity

20.03 ALL FINISHED – *telling parents she is through on toilet*

20.13 FINISH DOO-DADS – *wants to before leaving*

OVER (appearance/existence only)

Parent Use: “Is it over?”

Single-Word Use: to announce end of activities (especially TV programs)

Use in Combination:

20.01 FOOTBALL OVER – *went off TV*

20.02 MAN OVER NOW – *man on TV, goes off*

20.03 LADY OVER NOW – *I told her TV program would be on next*

20.08 BATMAN OVER – *TV show over*

20.25 PRETTY GIRL OVER – *TV program over*

4.3. Exchange and possession of objects

THANKS

Parent Use: (a) to thank T for objects she gave them; (b) telling her to thank people; (c) thanking her as they took away forbidden objects (i.e., pretending she gave it up voluntarily)

Single-Word Use and Use in Combination:

16.12 THANKS – *thanks Mama for her bottle*

16.12 THANKS – *pretends to give cracker to Daddy, withdraws*

16.14 THANKS – *pretends to take a bite of food from Daddy*

16.14 THANKS – *having forbidden plant taken from her*

16.16 THANKS – *pouring water on plants*

16.17 THANKS – *filling a bowl from a faucet*

- 16.18 THANKS – *placing berries on a couch*
 V16.25 THANKS – *upon receiving asked for picture from Mama*
 V16.25 THANKS – *after Mama instructs her to say it after Mama had given her an object*
 V16.25 THANKS – *thanking parent for cookie*
 17.07 THANKS – *when Daddy showed her how to open a door*
 17.17 THANKS...GUIDE – *upon receiving “guide” she had asked for*
 V17.26 THANKS – *as she gives pad to Mama*
 V17.26 THANKS – *as Mommy goes to get block*
 V17.26 THANKS – *receiving cookie*
 V17.26 THANKS – *giving Daddy a bite of food*
 V17.26 THANKS – *as Mommy gives her book*
 V17.26 THANKS – *receiving raisin*
 V17.26 THANKS – *taking cracker*
 18.02 THANKS, DADDY – *address*
 A18.25 THANKS – *upon receiving toy from Daddy*
 A18.25 THANKS – *upon receiving spoon from Daddy*
 V18.25 THANKS – *asks Mama to pull stem off apple, she does and returns it, T thanks*
 V18.25 THANKS – *upon receiving keys from Mama*
 V19.26 THANKS – *receiving purse*
 V19.26 THANKS – *receiving blanket*
 A19.27 THANKS – *receiving fork (two times)*
 A19.27 THANKS – *receiving toast (three times)*
 A19.27 THANKS – *having jelly put on her toast*
 A19.27 THANKS – *receiving bottle*
 A19.27 THANKS – *pouring water*
 A19.27 THANKS – *putting down towel*
 A19.27 THANKS – *receiving paper*
 A19.27 THANKS – *receiving book*
 21.10 THANKS, MOMMY, BRING A CHIPS – *Mama brought them to her*

HERE-GO

Parent Use: “Here you go” as they handed her things (19 months)

Use: as she handed objects to people

Single-Word and in Combination

- 19.23 'GO – *as she hands objects to Mommy*
 V19.26 'GO, MARIA – *as she hands her spoon*
 V23.00 THERE YOU GO – *handing object to Daddy*

GET-IT

Parent Use: in response to T’s expressed desire for an object, “You go get it”; for telephone “I’ll get it”

Single-Word Use:

- 16.24 GET-IT – *wants book we have been talking about (pointing)*

- V16.25 GET-IT – *wants toy*
 17.00 GET-IT...STUCK – *pen stuck in car seat*
 V17.26 GET-IT – *wanting toy on shelf*
 V17.26 GARBAGE...GET-IT – *trying to get garbage can from under table*
 V18.25 GET-IT – *wants out of reach keys (on table)*
 V19.26 UH OH...GET-IT – *drops chalk and retrieves*
 A19.27 GET-IT – *trying to spear egg*

Use in Combination:

- V16.25 BLOCK GET-IT – *wants block*
 16.26 BOTTLE GET-IT – *looking and pointing*
 16.26 PHONE GET-IT – *ringing*
 17.01 GET-IT HAT – *going to pick up hat*
 17.04 TOWEL GET-IT – *wants to be dried off*
 17.06 BEDUS GET-IT – *wants to play with bedus*
 17.07 COFFEE GET-IT – *pointing, wants some*
 17.07 MAMA GET-IT – *wants to “swim” to Mama*
 17.07 SPOON GET-IT – *as handing spoon to Dada*
 17.07 STICK GET-IT – *running toward it*
 17.08 BALL GET-IT – *order to Dada*
 17.08 FLOWERS GET-IT – *picking a flower*
 17.09 COOKIE GET-IT – *she dropped her cookie*
 17.09 MOOSE GET-IT – *she wants book (in sight)*
 17.09 POPS GET-IT – *she wants cereal (not in sight)*
 17.12 BOAT GET-IT – *running toward boat*
 17.12 LULU GET-IT – *wants picture of Lulu*
 17.17 BABY GET-IT – *her doll is on the floor*
 17.17 PETE GET-IT – *then goes and gets Pete*
 17.18 SILK GET-IT – *wants her silk (blanket)*
 17.19 DADDY GET-IT – *heard phone ring*
 17.19 MARIA GET-IT – *heard her voice, ran toward her*
 17.23 BIKE GET-IT – *wants to ride bike, running*
 17.25 BALLOON GET-IT – *reaching for balloon on mantle*
 17.25 BOOKS GET-IT – *wants Mama to get books*
 17.26 DOG GET-IT – *request of Mama*
 17.29 PETER PAN GET-IT BOOK – *command to Mama*
 18.01 GET-IT POKEY – *hears Pokey meow*
 18.03 GET-IT SILK – *in sight, out of reach*
 18.04 GET-IT BIRDS – *sees birds in yard*
 18.07 CUP GET-IT – *sees and wants cup*
 18.11 GET THE PENCIL – *sees it, can't reach it*
 18.11 GET-IT PUPPET – *wants it from across room*
 18.14 GET-IT BIRD – *looking out window*
 18.15 BUTTONS GET-IT – *picking at a button*
 18.16 GET-IT PRETTY – *Mama had called a butterfly (she doesn't know name)*
pretty
 19.01 GET-IT GUIDE – *gives it to me*

- 19.03 PIZZA GET-IT – *fell on floor, wants Mama to get it*
 19.16 BALL GONE...GET-IT...GOT-IT...GET-IT BALL – *ball rolls away, she chases, gets it (throws and gets)*
 19.26 GET-IT ON STEPS – *her bottles is on the steps*
 19.29 GET THE FLOWERS – *wants them*
 19.29 GET-IT SPOON – *saw spoon behind bed backboard*
 19.29 MOMMY GET SAUCE – *Mama is taking sauce off shelf*
 19.30 ME GET-IT – *trying to get Grover*
 20.00 GET SOME MUSIC – *wants us to get record and play it*
 20.01 GET GROVER...GROVER GET-OUT – *wants Grover out of crib*
 20.01 GET-IT SHELF – *wants to get spoon herself*
 20.03 DADDY GET-IT BOTTLE – *I did*
 20.06 GET-IT ANOTHER ONE – *picking up another chess piece*
 20.09 GET-IT WAGON PORCH – *wants to get the wagon from porch*
 20.09 ME GET-IT BROWN BOOK – *she wants it*
 20.20 GET GRAPES AT BIG-STAR – *when told there are none*
 20.23 GET ME UP THERE – *wants on top of slide*
 20.24 GET PING A FLOOR – *wants Ping, it's on floor*
 20.26 COME GET ME STUCK – *she is stuck and needs help*
 20.26 GET PING A DIAPERS – *wants someone to get Ping, who is on diaper shelf*
 20.29 MONSTERS GET PEOPLE – *on TV*
 21.00 GET RAISINS TO ME – *wants raisins*
 22.07 GET THAT PAPER FOR ME – *wants Mama to get the piece of paper she dropped*
 22.07 GET THAT PAPER TOWEL FOR ME – *picking up paper towel*
 23.00 GET PILLOW ON THE FLOOR – *telling me to get the pillow that's on the floor (she's on the couch)*
 V23.00 DO I GET COCA-COLA? – *question*
 V23.00 I'M GONNA GET MORE COCA-COLA – *statement*
 V23.00 IT GETS HEAVY – *holding pillow*
 V23.00 GET MORE COCA-COLA RIGHT BACK – *and I'll be right back*
 V23.00 GET IT BY MYSELF – *fending off Daddy*
 V23.00 I GET IT – *pretend phone (four times)*
 V23.00 HE CAN'T GET ONE – *toy*
 A23.00 COULD I GET KNIFE? – *asking Daddy (two times)*
 A23.00 I GET UP – *crawling up by herself*
 A23.00 GET ME UP HERE – *requesting help*
 A23.00 GET MY CHAIR – *requesting*
 23.25 GET THIS AWAY – *requesting that object be removed*
 23.25 GET THIS AWAY ON MY GUITAR – *wants paper off guitar*
 23.25 GET YOUR PAPERBACK ON YOUR LAP...JUMP ON-IT – *wants Dave to do it so she can jump*
 24.28 I WANT TO GET IN YOUR LAP – *she does*

GOT

Single-Word Use:

- V18.25 GOT-IT –
- chasing and catching toy truck*

- 19.16 BALL GONE . . . GET-IT . . . GOT-IT . . . GET-IT BALL – *ball rolls away, she chases, gets it (throws and gets)*
 V19.26 GOT-IT – *as retrieves pants just thrown*

Use in Combination:

- 18.13 GOT-IT WEEZER – *after catching cat*
 18.25 GOT-IT BALL – *after gets it*
 18.29 RING GOT-IT – *she just picked it up*
 19.28 DANNY GOT ME – *Danny caught her from monkey bars*
 20.00 WAIT, DADDY, GOT THE GUIDE – *yelling out window*
 20.19 LADY GOT UMBRELLA – *sees lady with umbrella*
 20.24 LADY GOT UMBRELLA – *sees lady (different) with umbrella*
 21.09 GOT FOR YOU, MARIA – *brought Maria a doll*
 V23.00 MARIA GOT REALLY MAD – *day before*
 V23.00 I GOT CHALK ALL OVER ME – *she did and does*
 V23.00 GOT ALL IN THE MUD – *day before*
 V23.00 NO! HOLD IT. GOT TO HOLD IT – *keeping it*

BACK

Parent Use: “Give that back” and “Do you want that back?”

Single-Word Use:

- 17.10 BACK – *toy taken from her, she wants it back*
 17.11 BACK – *food cleared from table, she wants it back*
 17.13 BACK – *bottle taken from her, she wants it back*
 17.16 BALL . . . BACK – *she threw ball down stairs, wants it back*

Use in Combination:

- 18.25 BACK SALT – *wants salt back (she had taken it away)*
 19.26 BACK WEEZER . . . HAVE-IT – *wants her blanket back from Weezer*
 19.30 BACK THESE – *putting dolls back on shelf*
 20.05 STAR BACK HERE – *star on the seat of my pants*
 20.24 COME BACK – *calling dogs as they are leaving*
 20.24 COME BACK HERE POPCORN – *it fell away, grabbing it*
 21.09 SNAP BACK RIGHT THERE – *rubber band*
 21.21 HAVE THAT BACK – *wants to, Maria took*
 21.29 PUT MY SHOES BACK ON – *she took them off*
 22.03 COME BACK HERE – *demand to Maria*
 22.03 COME BACK THERE SEE FLINTSTONES – *in store*
 22.04 PUT-IT BACK – *takes orange off counter, puts back*
 23.00 ROLL-IT BACK FOR ME – *playing ball (she means “to”)*
 V23.00 PUT MY SPOON BACK IN MY CUP – *doing it*
 V23.00 GET MORE COCA-COLA RIGHT BACK – *announcing her intentions*
 23.25 GET YOUR PAPER BACK ON YOUR LAP . . . JUMP ON-IT – *wants Dave to do it so she can jump*

HOLD

Parent Use: (a) about T herself: to T, “Do you want me to hold you?” to each other “Hold her”; (b) about objects: telling T to “Hold this” or “You hold it” (to refuse object)

Single-Word Use:

- 17.00 HOLD – *wants to be picked up (reaching to parent)*
 17.00 HOLD-IT – *gives bottle to Daddy to hold*
 17.03 HOLD – *wants Mama to hold stick*
 17.03 HOLD – *wants to hold her bottle herself*
 V18.25 CUP... HOLD – *wants to hold cup Daddy has*
 V19.26 NO!... HOLD-IT – *wants to keep doll herself (Maria is trying to take it away) (two times)*
 V19.26 HOLD – *wants Mama to hold doll so Maria can't get it*
 V23.00 HOLD-IT – *she wants to*

Use in Combination:

- 17.07 MAMA HOLD – *asking, demanding*
 17.07 DADA... HOLD – *wants Mama to give her (bodily) to Daddy*
 17.07 JELLO... HOLD – *wants to hold spoon and feed herself*
 18.06 HOLD WEEZER – *wants to hold*
 18.07 RAISIN... HOLD THAT – *Dada had been giving her raisins one at a time, she wants to hold the box*
 18.19 HOLD EYES – *wants to hold Visine (calls it eyes)*
 18.22 HOLD SPOON – *wants Mama to hold spoon*
 18.23 HOLD BUBBLES – *command to Mama*
 18.24 HOLD DA PENCIL – *command to Mama*
 18.25 HOLD DA CIGOS – *wants to hold cigarettes*
 18.25 HOLD WEEZER – *wants to hold Weezer*
 18.27 HOLD DA JELLY – *she wants to*
 18.27 HOLD DA SILK – *wants Mama to (throws it)*
 18.28 HOLD SPOON – *wants Mama to*
 18.30 HOLD HAT – *wants to hold it, Mama has it*
 19.01 HOLD THIS BALL – *wants to*
 19.02 HOLD BEAR – *wants to*
 19.02 HOLD GUITAR – *wants to (Mama is)*
 19.03 HOLD CUP – *wants to, Dada has it*
 19.03 HOLD THE SPOON – *being fed, wants to hold it*
 19.03 HOLD THIS CREAM – *wants to hold ice cream spoon*
 19.03 HOLD THIS SPOON – *wants to hold ice cream spoon*
 19.03 HOLD THIS... HOLD TOP – *wants to*
 19.04 HOLD SILK – *grabbing at it*
 19.04 HOLD THE BUBBLES – *wants to hold bottle of them*
 19.04 HOLD TOP – *wants to, it is stuck on bottle*
 19.05 HOLD BEER – *wants to (Mama giving her sips)*
 19.05 HOLD GLASSES – *wants to, Mama is*
 19.07 HOLD PLATE – *wants Mama to*
 19.11 HOLD THIS BLOCKS – *wants to (I have them)*
 19.11 HOLD THIS POC – *wants Mama to (pocketbook)*
 19.14 HOLD TOWEL – *doing it*
 19.16 HOLD THE GRAPE JUICE – *wants Mama to hold her juice*
 19.16 HOLD THIS PAPER – *wants to (I have it)*

- 19.17 HOLD RING – *apple rings (she wants to hold and more)*
 19.17 HOLD-IT SCISSORS – *she is*
 19.19 HOLD THE FLOWERS – *she wants me (Mama) to*
 19.19 HOLD THE FLOWERS – *she wants to*
 19.23 HOLD THE PLATE – *wants to, I (Dada) have it*
 19.23 HOLD THE BIG BIRD – *on shelf, wants it*
 19.23 HOLD THE FORK – *wants to, I have it*
 19.23 HOLD THE PAPER-TOWELS – *wants to (I have them)*
 A19.26 DADDY! HOLD-IT . . . HOLD-IT – *she wants to hold toast as he puts
 jelly on it*
 19.29 HOLD ME – *wants Mama to*
 19.29 HOLD THE PEN – *I (Dada) am, she wants to*
 20.01 HOLD THIS PHONE – *wants to*
 20.02 HOLD THIS MARIA'S NECKLACE – *wants to*
 20.08 HOLD THIS WALLET NOW – *I (Dada) took it away, she wants it*
 20.10 DADDY HOLD MINE – *Dada is holding her (new) crayons*
 20.12 MOMMY HOLD MY HAND – *Mama told her they were going to cross
 street*
 20.27 HOLD ME IN THE ROCKING CHAIR – *she wants me (Mama) to*
 21.01 HOLD ME IN THE LAP – *wants to be*
 V23.00 CAN YOU HOLD ME? – *request*
 V23.00 I HOLD IT – *she wants to*
 V23.00 HOLD THE CHALK – *telling Daddy to*
 V23.00 NO! HOLD IT. GOT TO HOLD IT – *keeping it*
 24.28 I WANT TO HOLD YOUR TEA – *she does*
 25.00 I WANT TO HOLD YOUR FAN – *she does*

HAVE

Parent Use: no notes

Single-Word Use:

- V19.26 MARIA! . . . HAVE-IT – *wants chalk Maria has*
 19.26 BACK WEEZER . . . HAVE-IT – *wants her blanket back from Weezer*

Use in Combination:

- 19.20 BALLOON HAVE-IT – *wants it*
 19.20 HAVE-IT CARDS – *she wants them*
 19.21 DADDY HAVE THIS WALLET – *holding his wallet, wanting him to
 have it*
 19.22 MARIA HAVE THIS FLOWER – *offering it to her*
 19.23 GIRL HAVE THAT UMBRELLA – *girl with umbrella*
 19.23 HAVE THE BIG BIRD – *on shelf, wants it*
 19.24 DANNY HAVE THIS BALL – *he has it*
 19.24 HAVE THE GUM . . . MOUTH . . . IN THERE – *she wants gum*
 19.24 LINDA HAVE-IT MORE CREAM – *she'd been told we have no more
 ice cream (Linda gave her some days before)*
 V19.26 DADDY, HAVE THE BOTTLE – *requesting bottle from Daddy*
 V19.26 PHONE . . . HAVE THE PHONE – *Maria has it, she wants it*

- V19.26 HAVE ONE TOO – *she is saying she does*
20.02 PEOPLE HAVE THOSE SPOONS – *she wants one for ice cream*
21.09 YESTERDAY MARIA HAD THAT UMBRELLA – *reporting*
21.16 HAVE JUICE IN MY BOTTLE – *wants it*
21.16 HAVE ONE TOO MYSELF DADDY – *wants what I have (nuts)*
21.19 HAVE SOME MY PICTURE – *pretending to feed picture*
21.20 HAVE A DOUGHNUT FOR-YOU – *telling me*
21.21 HAVE THAT BACK – *wants to, Maria took*
21.27 HAVE MOMMY FIX-IT – *her toy broke*
22.02 HAVE JELLY ON MY TOAST – *demand*
22.03 HAVE MORE AGAIN – *cereal*
22.07 HAVE PEANUT BUTTER IN-IT – *we bought some bread, telling me what she wants on it*
V23.00 I HAVE THE CHALK – *reporting*
V23.00 CAN I HAVE A BITE? – *pretend*
V23.00 CAN I HAVE MORE COCA-COLA? – *asking parents*
24.28 SHE HAS SNAKES IN HER NECK – *cat with worms*

GIVE

Parent Use: (a) “Give me the _____ ” or “Give it to me”; (b) “ _____ gave that to you”

Single-Word Use: wants someone to give her something

- 19.23 GIVE IT – *wants the cards Maria has*
V19.26 GIVE-IT . . . GIVE-IT – *Maria has phone, she wants it (three times)*

Use in Combination:

- 19.16 GIMME ME – *wanting toy friend has*
20.01 GIVE-IT PENCIL – *Mama has it, she wants it*
22.10 JOE GIVE THAT FOR YOU – *on TV, Joe gave it to woman*
A23.00 GIVE IT TO ME – *telling Daddy to*

GAVE

Parent Use: “ _____ gave that to you”

Single-Word Use: none

Use in Combination:

- 21.05 AUNT LULU GAVE ME BOOTS – *she had*
22.07 GRANMOMMY GAVE THAT FOR MOMMY – *Mommy is holding doll Granmommy gave to Travis*
22.08 LAURA GAVE THAT FOR ME – *she had*
22.09 MOMMY GAVE THAT CEREAL FOR ME TO EAT – *she did*
22.10 SANTA CLAUS GAVE IT FOR ME – *he gave her a lollipop*
22.11 TIMOTHY GAVE THAT NECKLACE FOR ME – *he had*
V23.00 SANTA CLAUS GAVE LOLLIPOP FOR ME – *reporting*

SHARE

Single-Word Use: giving part of something she had to person or pet

Use in Combination:

- V19.26 SHARE ME – *wants Maria to share her chalk*
 20.01 SHARE THIS PEN – *Daddy is using it, she wants it*
 20.03 SHARE ME – *wants Daddy to share his milk with her*
 20.19 SHARE MARIA'S COAT – *she wants to wear it*

USE

- V19.26 USE IT ... USE IT TOO – *wants to use phone*
 20.19 USE MARIA'S NECKLACE – *it's on shelf, she wants it*

BUY

- 19.29 BUY THIS PLUM – *Mama bought at store 20 minutes earlier*
 19.29 BUY THIS SPONGE – *Mama did at store, unpacking groceries*
 19.29 BUY WEEZER CAT – *(cat-food) Mama bought at store 20 minutes earlier*
 19.30 DADDY BUY THIS – *records (she had gone to store with us)*
 20.21 BUY OTHER KINDS BALLOONS – *wants to buy them*
 21.08 BUY POPSICLE NOW AFTER THAT – *in store*
 21.27 GO SEVEN-ELEVEN BUY MORE COCA-COLA – *wants to*

KEEP

Single-Word Use: "Keep" or "Keep-it" when someone was trying to take away object she did not want to relinquish (23 months)

Use in Combination: none

LEFT

- 22.16 LEFT MY COAT IN SCHAUFELE'S HOUSE – *she did*

4.4. Location of objects

UP

Parent Use: "Do you want to get up here?"

Single-Word Use: "Up-here" as request

- 17.20 UP-HERE – *wants up on couch*
 17.20 UP-HERE – *commenting as she crawls up on bed*
 17.22 UP-HERE – *trying to get up in car*
 17.25 UP-HERE – *wanting help up into high chair*
 17.27 MINO ... UP-HERE – *wanting dog to join her on bed*
 A18.25 UP-HERE – *commenting on her climbing into chair*
 V18.25 UP-HERE – *wants to be lifted so that she can reach lock (four times)*
 V18.25 UP-HERE – *commenting on her climbing into chair*
 V19.26 UP-HERE – *commenting as she climbs into chair (four times)*
 V19.26 UP-HERE – *commenting as she climbs in Mama's lap*

Use in Combination:

- 18.05 UP-HERE LAP – *wants up in Mama's lap*
 18.11 UP 'N' DOWN – *yo yo*

- 18.17 DADDY UP – *Dad's in bed, she's on floor*
- V18.25 UP-HERE DOWN – *as she places keys and eraser into tray over her head*
- 19.02 UP-HERE BED – *demanding of Mama on bed*
- 19.10 CRAYON UP-HERE – *putting it up on counter*
- 19.13 UP STEPS – *wants to go up steps*
- 19.17 UP-HERE TREE – *wants to be put up in tree*
- 19.21 UP-HERE TREE – *wants up in tree*
- 19.21 UP-HERE BED – *wants up on bed*
- 19.76 LITTLE STICKERS UP-HERE – *she sees them, she's on porch*
- 19.26 UP-HERE SILK – *putting silk on couch*
- 19.27 MARIA UP-HERE – *she's on the bed, T on floor*
- A19.27 WEEZER UP-HERE TREE – *cat in tree out window (two times)*
- 19.29 CAR UP-HERE – *climbing up onto car*
- 20.06 CLEAN THIS UP-HERE – *doing it with mop*
- 20.06 LOOK ME UPSIDE-DOWN – *she is, and is telling me*
- 20.08 UP-HERE THIS FORK – *putting it on counter*
- 20.13 UP-HERE ME – *she wants up on swing*
- 20.14 BRING THIS WEEZER PILLOW UP-HERE – *up into Mama's lap*
- 20.19 DRINK MINE TEA UP – *Mama is*
- 20.19 EAT MINE SKIN UP – *(banana skin) doing it*
- 20.21 NEED THIS UP-HERE – *wants book off shelf*
- 20.22 PETE LICK MY MILK UP – *he licks up her spill*
- 20.23 GET ME UP THERE – *wants on top of slide*
- 20.24 ATE MINE GRAPE UP – *Mama ate her grape*
- 20.24 DRINK MY TEA UP – *doing it*
- 20.24 UPSIDE-DOWN – *wants Dada to hold her that way*
- 20.25 APPLE JUICE UP COUNTER – *it is up on the counter*
- 20.25 COVER ME UP – *wants to be covered*
- 20.25 UP SKY TRAVIS – *wants me (Dada) to throw her up*
- 20.26 COVER BEDUS UP – *covering up bosoms with blanket*
- 20.26 UPSIDE-DOWN BABY DOLL – *it is*
- 20.27 WEEZER EAT MY DINNER UP – *she's afraid he will*
- 20.28 EAT THAT WAFFLE UP – *doing it*
- 20.29 REMEMBER MONSTERS UP IN SKY – *telling neighbor about TV show with monsters*
- 21.05 HEY, PUT THAT UP – *doing it on shelf*
- 21.05 LAY DOWN COVER UP – *to her dolls*
- 21.06 PICK THAT COFFEE UP DRINK – *wants to*
- 21.07 PULL MY PANTS UP – *she is doing it with help*
- 21.08 PUT UP SKY – *she wants to be lifted*
- 21.10 BECAUSE . . . MARIA SCARES ME UP HIGH – *Maria is up in window on second floor*
- 21.10 PUT RAISINS UP THERE ON SHELF – *doing it*
- 21.10 PUT THAT BOTTLE UP THERE – *putting it on ledge*
- 22.04 I SEE YOU UP THERE – *I'm in the tree*
- 22.04 I SEE YOU UP THERE AGAIN – *I'm in the tree*
- 22.04 PUT-IT UP THERE BY THE WINDOW – *placing toy on window sill*

- 22.07 COME UP THERE – *wants me to come to her (here)*
 V23.00 UP THERE BUG – *commenting that it is (two times)*
 V23.00 UP THERE IN THE SKY – *talking about planned plane trip*
 V23.00 CLIMB UP HERE CHAIR, OKAY? – *as she does*

DOWN

Parent Use: asking T if she wants to get down from somewhere; telling her to put things down

Single-Word Use:

- 16.26 DOWN – *wants down from parents arms*
 16.26 DOWN – *wants to descend the stairs (needs help)*
 16.27 DOWN – *wants to be put down from high chair*
 16.29 DOWN – *comments as she puts down bowl of food*
 17.07 DOWN – *comments as she puts bacon down on table*
 17.16 BOOK... DOWN – *wants down off bed to retrieve fallen book*
 17.23 SHIRT... DOWN – *wants to play game of pulling shirt down*
 A17.26 COOKIES... DOWN – *putting them down*
 V18.25 DOWN – *as she gets down from chair*
 V18.25 DOWN – *as she puts down cup*
 V18.25 DOWN... DOWN – *sitting down in chair briefly (was standing in it) and then crawling down to floor*
 V18.25 DOWN – *as she puts eraser down in chair*
 V18.25 DOWN – *as she puts down key*
 V18.25 DOWN – *as she puts down stapler*
 V18.25 APPLE... DOWN – *as she puts apple down into cup*
 V18.25 DOWN – *as she puts toys down into box*
 A18.25 DOWN – *as she gets down from couch to retrieve book*
 A18.25 TAPE RECORDER... DOWN – *putting down tennis racket so she can hold tape recorder (two times)*
 V19.26 DOWN – *as she sits down*
 V19.26 DOWN – *as she sits down to draw*

Use in Combination:

- 17.17 BOY DOWN – *looking at picture on the floor (she's in chair)*
 17.24 MONKEY DOWN – *she had been told earlier "they took the monkey down" (picture on wall). Looks up, then down and says "XXX"*
 17.25 PETER DOWN – *imperative to Mama to put down Peter Pan books (wants another)*
 18.01 PATUS DOWN – *putting down patus (french fries)*
 18.01 TOWEL DOWN – *as Mama is trying to get towel down from shelf*
 18.08 HELP A DOWN – *asking Mama to help down*
 18.08 KITTY DOWN – *she had been told "put the kitty down" a few minutes ago*
 18.10 MOMMY DADDY DOWN – *she wants down off porch*
 18.11 UP 'N' DOWN – *yo yo*
 18.15 WATER DOWN – *telling Mama where to put hose*
 18.19 TIGER DOWN – *pulling tiger towel off bed*

- 18.23 SILK DOWN – *puts silk down*
 18.23 TATO DOWN – *puts potato on floor*
 18.24 TIGER DOWN – *putting down toy*
 A18.25 TENNIS DOWN – *putting down tennis racket*
 V18.25 UP-HERE DOWN – *reaching up to blackboard tray and putting eraser and key down into it*
 V18.25 DOWN CHAIR – *climbing down from chair*
 18.27 WEEZER PILLOW DOWN – *picking it up then putting it down*
 18.28 APPLE DOWN – *putting it down*
 18.29 COFFEE DOWN – *as I (Mama) put down pot*
 18.30 CEREAL DOWN RUG – *puts it down to use hands*
 18.30 DROP-IT DOWN – *drops berry*
 18.30 SALAD DOWN – *putting it on the floor*
 18.30 TENNIS DOWN RUG – *puts it down to use hands*
 19.00 ORANGE DOWN – *putting it on table*
 19.00 PUPPY DOG DOWN – *in hand, wants to put it down (picture)*
 19.01 PIZZA DOWN – *putting it down on table*
 19.01 TWO RUGS DOWN – *putting two rugs down*
 19.09 COFFEE DOWN TABLE... MAN – *I put my cup on the table on top of a magazine with a man's face on it*
 19.10 BOWL DOWN – *as she's putting it down*
 19.11 DOWN TABLE – *wants juice put down on table so she can get it (I have it)*
 19.13 HAMBURGER DOWN – *puts on floor*
 19.15 DOWN GRASS – *wants to be put down*
 19.15 DOWN ON COUCH – *answer to "why don't you put down your plate"*
 19.16 DOWN THIS RIGHT HERE – *putting cards on ground*
 19.16 PUSH DOWN DADDY – *trying to shut door, wants help*
 19.18 DOWN TOY – *putting it down*
 19.20 CYCLE-MAN DOWN – *it's down a hill*
 19.20 DOWN RUG – *puts apple down on rug*
 19.22 DOWN HERE GRASS – *putting leaf down*
 19.23 PILLOW DOWN HERE – *pushing it off another pillow to ground and lying on it*
 19.25 LAY DOWN – *lying down*
 19.26 DROP DOWN – *wants to (monkey bars)*
 V19.26 BOWL DOWN HERE – *putting it down on floor*
 V19.26 DOO-DOO DOWN HERE – *it's on floor*
 V19.26 DOWN HERE – *putting bowl on floor*
 19.28 PEN DOWN – *putting it down*
 19.29 DOWN HERE GROUND – *putting glasses down*
 19.29 SPOON DOWN THERE – *saw spoon behind bed blackboard*
 20.01 WEEZER DOWN HERE – *putting her down on floor*
 20.02 LAY DOWN CHAIR – *doing it on chair*
 20.03 PUSH DOWN HORSE NOW – *doing it (push down a ramp)*
 20.03 PUSH HORSE DOWN – *pushing horse down a ramp*
 20.06 PUSH DOWN TABLE – *pushing down on edge of table*

- 20.07 SHADES DOWN WINDOW – *wants shade down on window*
 20.08 GET DOWN THIS BOOK – *wants it from top shelf*
 20.09 DROP DOWN TABLE – *wants to (off monkey bars)*
 20.10 DRAW ON PAPER-PLATE DOWN HERE – *squatting to draw on paper plate on floor*
 20.11 GET DOWN ME – *wants Mama to get her down*
 20.15 PIECE OF ICE DOWN HERE TABLE – *putting it on table*
 21.05 LAY DOWN COVER UP – *to her dolls*
 21.21 BEAR DOWN IN THE PEE-PEE – *she put the bear down in the pee-pee she spilled*
 22.02 PUT MY TOOTHBRUSH DOWN – *doing it*
 V23.00 DOWN THIS CHAIR – *getting down from chair*

ON (change of location only)

Parent Use: telling T to put on clothes, shoes, etc.

Single-Word Use: none

Use in Combination:

- 18.13 SHOES-ON MARIA – *putting on Maria's shoes*
 18.18 CAKE ON – *sees cake on her face in mirror*
 18.22 BOOK ON – *putting book on arm of chair*
 18.28 SHOES-ON OFF – *wants them off*
 19.10 ON HEAD – *asking to get on top of head to be higher to reach light*
 19.12 ON STICK – *pointing to popsicle (she had heard "it fell off the stick")*
 19.13 NIGHTGOWN ON – *request to put it on*
 19.13 STUCK ON BOWL – *a bubble is stuck on a bowl*
 19.14 JOHN'S SHOES-ON – *picture in book*
 19.15 DOWN ON COUCH – *answer to "why don't you put down your plate"*
 19.16 HELMET ON – *wants it*
 19.16 PUT-IT ON RING – *pointing to my ring*
 19.19 RING . . . FINGER ON – *wants it on her finger*
 19.19 TOES ON – *ring is on her toe*
 19.20 SIT ON THE BED – *while doing it*
 19.21 BUG ON MONKEY BARS – *it is*
 19.21 NI-NI ON THIS – *lying down (ball for pillow)*
 19.21 ON THE PILLOW – *she's lying on it*
 19.21 PANTS ON – *while I'm putting them on*
 19.22 POTATO ON FORK – *wants it off*
 19.23 BLOW ON THIS HERE – *wants Mama to blow on new toy*
 19.23 HOUSE ON THERE – *on label of syrup*
 19.23 MOMMY SPILL-IT ON LEG – *telling Mama about spill*
 19.23 NOSE ON THERE – *pointing to toy's nose*
 19.23 RIA'S SHIRT ON THERE – *wanted to keep dress on*
 19.23 RUBBER BAND ON – *putting it on her toes*
 19.24 HANDS ON THERE – *putting Grover on her hands*
 19.26 ELF ON THERE – *wants hat off head*
 19.26 GET-IT ON STEPS – *her bottle is on the steps*

- 19.26 GROVER ON THERE – *wants it on Mama's hand*
 19.26 PLAY ON MONKEY BARS – *wants to*
 V19.26 NOSE ON THERE – *commenting about toy*
 V19.26 ON THERE – *putting toy bear on table*
 A19.27 PAPER TOWEL... ON THIS – *putting it on table*
 A19.27 TAPE OFF THERE... ON THERE – *taking tape on and off hand*
 19.27 GLASSES ON THERE – *she put them on*
 19.27 RUBBER BAND ON THERE – *on her leg*
 19.29 BUG ON – *while scratching*
 19.29 ON TABLE – *as putting cans on table*
 19.30 BIB ON THERE – *I (Mama) was putting bib on her*
 19.30 PUT ON MOMMY'S SHIRT – *as I was putting on my shirt*
 19.30 SOCKS ON THERE – *putting it on*
 20.01 MARSHMALLOW STUCK ON THERE – *on moose horns in book*
 20.01 PUT GROVER ON THERE – *wants him on her hand*
 20.01 SKATES ON THERE – *pretending skating, has on Mama's shoes*
 20.04 HAT ON THERE – *putting top on acorn*
 20.07 DADDY PUT-A... NEW PAJAMAS ON – *I put them on her*
 20.07 DRESS ON THERE – *putting it on*
 20.07 HI MIRROR... PANTS OFF... ON – *trying on clothes*
 20.08 DRAW STAR ON ME – *wants Mama to*
 20.08 PEOPLES ON THERE BOAT – *people in boat*
 20.10 DRAW ON PAPER-PLATE DOWN HERE – *squatting to draw on paper plate on floor*
 20.10 WRITE ON DADDY'S CHAIR – *she is doing it*
 20.11 DIAPERS ON ME – *wants diaper on (just taken off)*
 20.11 FUNNY MASK ON ME – *she's holding it over face*
 20.15 WHOLE-BUNCH MEDICINE ON THIS – *on her cut*
 20.19 ATE MINE POTATO-CHIP ON FLOOR – *cat did it*
 20.19 LOOK MARIA SWEATER ON ME – *she just put it on*
 20.19 NEW RUBBER GLOVES ON THERE – *wants them on hands*
 20.20 BAGSWING ON ME – *I want on bagswing*
 20.20 PUT ON ME – *wants glasses on*
 20.21 SHOES ON THERE – *sees them on clothesline*
 20.22 GLASSES ON ME – *wants them on*
 20.24 PLAY ON FLOOR... PLAY WITH BLOCKS – *wants what she says*
 20.25 GLUCK ON THERE – *mildew on purse*
 20.25 ON THERE ME – *wants on swing*
 20.27 CHEESE ON THE TRISCUIT – *wants it*
 21.00 BALLOON ON DADDY'S FINGER – *it is*
 21.00 PUT HAT ON THESE FEET – *putting it on Fred's feet*
 21.00 PUT THAT FRED ON HAT – *putting Fred's hat on his head*
 21.00 PUT THAT FRED ON HEAD – *putting Fred's hat on his head*
 21.00 SUGAR ON MARIA'S TOES – *playing with sand*
 21.01 BUG ON ME IN THE EYE – *telling us (holding eye)*
 21.05 MILK ON MY FACE – *it is*
 21.13 DRAW ON THE PAPER – *doing it*

- 21.13 RIDE ON MOMMY – *doing it*
 21.17 PUT MY NEW COAT ON ME – *wants Mama to*
 21.22 BAND-AID ON MY FACE – *it is*
 21.29 PUT MY SHOES BACK ON – *she took them off*
 22.02 HAVE JELLY ON MY TOAST – *demand*
 22.07 ON MY NOSE – *something in her nose*
 22.07 SAND ON MY EYE – *it is in her eye*
 22.27 WIPE-IT OFF ON SWING – *wiping mud on swing*
 23.00 GET PILLOW ON THE FLOOR – *telling me to get the pillow that's on the floor (she's on the couch)*
 23.00 HOLLY'S RIDING ON DOPEY – *girl riding on dinosaur on TV*
 23.00 ON MY FACE – *rubbing lotion on face*
 23.25 GET THIS AWAY ON MY GUITAR – *wants paper off guitar*
 23.25 GET YOUR PAPER BACK ON YOUR LAP... JUMP ON-IT – *wants Dave to do it so she can jump*
 23.26 TAKE THIS AWAY AND PUT-IT ON THE TABLE – *doing it*

OFF (change of location only)

Parent Use: telling her to take off clothes, shoes, etc.; telling her to wipe her face off

Single-Word Use:

V18.25 OFF – *wants Daddy to take her scarf off (two times)*

Use in Combination:

- 18.19 NECKLACE OFF – *taking it off herself*
 18.22 PIZZA OFF – *wiping pizza off her face*
 A18.25 THAT OFF – *trying to pull plastic off package (five times)*
 18.27 BUTTON OFF – *Maria is unbuttoning her own dress*
 18.27 NIGHTGOWN OFF – *doesn't want it on*
 18.28 SHOES-ON OFF – *wants them off*
 18.29 PANTS OFF – *wants them off*
 18.29 RING OFF – *wants it off her finger*
 18.29 THAT OFF – *wants plastic off cigarette pack*
 18.30 HAT OFF – *wants Mama to take off hat*
 19.02 BIKE OFF – *telling me to get off*
 19.03 TOWEL OFF – *taking towel off from around shoulders*
 19.04 PAPER OFF – *telling Mama (ice cream sandwich)*
 19.04 SHIRT OFF – *wants Maria to go swimming*
 19.05 CHICKEN OFF HANDS – *Mama wiping hands*
 19.10 PEAS OFF TABLE – *she's wiping them off with sponge*
 19.11 STICK OFF – *of pear*
 19.12 EYES OFF – *playing (had seen it on TV)*
 19.12 NOSE OFF – *playing (had seen it on TV)*
 19.14 DRESS OFF – *doll naked*
 19.15 PAPER OFF – *request for paper off popsicle*
 19.19 RING OFF – *wants Carol to take hers off*
 19.19 PIGTAILS OFF – *wants hers off*

- 19.21 TOP OFF – *taking it off a jar*
 19.22 DIAPER OFF – *doesn't want Mama to put on*
 19.22 RUBBER PANTS OFF – *doesn't want Mama to put on*
 19.24 GROVER OFF – *wants puppet off Mama's hand*
 19.24 GROVER OFF THERE – *same as previous entry*
 19.25 MARIA GET OFF THERE – *wants her to (toy)*
 19.25 ROBE OFF – *wants it off*
 V19.26 PANTS OFF HERE – *throwing them off chair*
 A19.27 TAPE OFF THERE . . . ON THERE – *taking tape on and off hand*
 19.26 GROVER OFF THERE – *wants it off Mama's hand*
 19.26 RUBBER BAND OFF – *taking it off her leg*
 19.27 DUCK SHIRT OFF – *wants it off*
 19.27 PIGTAIL OFF THERE – *taking it off*
 19.27 RUBBER BAND OFF THERE – *her leg*
 19.29 CANDLES OFF – *stick candles off cake*
 19.30 GET OFF THERE – *wants off my back*
 19.30 SHOES OFF THERE – *taking hers off*
 19.30 SOCKS OFF THERE – *taking hers off*
 20.00 SOCK OFF THERE – *wants it off (asking Mama)*
 20.01 HAIR OFF THERE – *wants hair off raisin*
 20.06 COME-ON, MOMMY, SHIRT OFF
 20.06 NAIL OFF THERE – *wants it off (should be out)*
 20.07 HI MIRROR . . . PANTS OFF . . . ON – *trying on clothes*
 20.15 WEEZER GET OFF DADDY'S ROCKING CHAIR – *telling cat*
 20.16 PAPER OFF THIS MINE SILK – *taking paper off her silk*
 20.17 MOVE PAJAMAS OFF THIS – *moving them off chair*
 20.20 TAKE THIS KEY OFF – *wants key out of door*
 20.22 GET ME OFF – *wants off swing*
 20.22 GET THE SILK OFF – *wants it off her*
 20.22 TAKE THIS DRESS OFF – *wants me to (doll)*
 20.22 WIPE THIS BABY-DOLL OFF – *wants me to*
 20.22 WIPE THIS SHIRT OFF – *want me to (doll)*
 20.23 GET ME OFF HERE – *wants out of swing*
 20.23 GET MOMMY'S PANTS OFF – *moving them off couch*
 20.23 TAKE THIS PAPER OFF – *doing it (off package)*
 20.28 GET ME OFF THERE – *wants off swing*
 21.00 TAKE THE SKIN OFF – *wants it off her apple*
 21.00 WIPE ME OFF SILK – *wants to be wiped with silk*
 21.01 TAKE THAT BELT OFF ME – *wants her belt off*
 21.02 LEAF OFF MY SOCK – *taking it off her sock*
 21.03 TAKE THIS PAPER OFF – *taking it off crayon*
 21.04 TAKE SKIN OFF HOT-DOG – *wants Mama to*
 21.12 COME OFF GROVER – *she broke string off Grover*
 21.12 GROVER BROKEN OFF – *she broke string off him*
 21.13 THAT CAME OFF RUG – *piece of yarn*
 21.13 THAT THING CAME OFF CORN – *kernel of corn*
 21.15 PUT NEW PAJAMAS OFF – *means "take off"*

- 21.30 TAKE MY DIAPERS OFF ME – *while I'm doing it*
 22.02 TAKE THAT OFF ME – *her sweater*
 22.02 TAKE THAT OFF THERE – *wants toy off her paper (drawing)*
 22.03 NO MOMMY WIPE MY BUTT OFF MYSELF – *wants to*
 22.04 GET THESE PICKLES OFF MY HAMBURGER – *taking them off*
 22.07 TAKE-IT OFF BY MYSELF – *when I offer to take her shoe off*
 22.27 WIPE THIS OFF THERE – *wiping shoes (mud) on board*
 22.27 WIPE-IT OFF A SWING – *wiping mud on swing*
 22.27 WIPE-IT OFF ON SWING – *wiping mud on swing*
 V23.00 IS THAT OFF PLEASE? – *wanting it off*

IN

Parent Use: no notes

Single-Word Use: none

Use in Combination:

- 19.16 PUT-IT IN – *putting binoculars in case*
 19.21 PUT-IT IN THERE – *wants to put ice in glass*
 19.21 SPOON IN – *it is in a cup*
 19.22 BUGS IN THERE – *turned over chairs and saw spider webs with spider*
 19.23 PETE HURT THE FINGERS IN THERE – *holding her fingers (no incident we're aware of)*
 19.23 PUT-IT IN THERE – *putting paper in glass*
 19.23 RIDE IN HERE – *she's riding in seat that moves*
 19.24 HAVE THE GUM... MOUTH... IN THERE – *she wants gum*
 19.24 RAISIN IN THERE – *raisin's in oven*
 19.25 PEE-PEE IN THIS ROOM – *she had peed there earlier*
 19.26 BACON IN THERE – *in the bagel*
 19.29 BALL IN HERE – *wants me to put golf ball in paper slot*
 19.30 BUG IN THE PANTS – *itch*
 20.00 WATER IN THERE – *looking at boiling water*
 20.01 PICTURE IN THERE – *opening songbook and closing*
 20.01 RUN IN THE STREET – *remembers incident*
 20.02 B IN THERE TENNIS – *a "w" on a tennis racket*
 20.02 FRENCH FRIES IN HAND – *wants more fries in her hand*
 20.03 IN MARIA'S CAR – *while sitting in*
 20.07 TOYS IN THERE – *telling us they are*
 20.11 STICK A FOOT IN HERE – *in empty Coke six pack*
 20.15 CHICKEN AND STARS IN MY SOUP – *chicken and stars soup*
 20.16 TINY BABY IN THE PLAYPEN – *saw it 1 hour earlier*
 20.19 FINGERS IN THERE KETCHUP – *putting her finger in it*
 20.19 PUTTING SPOONS IN THERE – *putting them in kitchen*
 20.20 BETTY-ANN'S CAR IN THE STREET – *it is*
 20.22 RAISIN IN MOUTH – *it is in her mouth*
 20.27 DANA PUSHED ME REAL HIGH IN A BAGSWING – *recounting event from days before (should be "on")*
 20.27 HOLD ME IN THE ROCKING CHAIR – *she wants me (Dada) to*

- 20.27 **PIECE OF ICE IN THERE** – *it's in a glass*
 20.29 **REMEMBER MONSTERS UP IN SKY** – *telling neighbor about TV show with monsters*
 21.01 **BUG ON ME IN THE EYE** – *telling us (holding eye)*
 21.01 **HOLD ME IN THE LAP** – *wants to be*
 21.03 **MOMMY COME-ON IN LIVING ROOM** – *calling her*
 21.04 **PUT SHAMPOO IN A WINDOW** – *doing it*
 21.04 **STICKERS IN THE PORCH** – *telling us as we walk around porch*
 21.08 **PUT THAT IN THE ICE** – *she is putting ice back in glass*
 21.08 **SEE EGG IN THE REFRIGERATOR** – *to Mama*
 21.09 **DOO-DOO GOES-IT THE WATER IN THE POTTY** – *as pouring it into toilet from potty*
 21.10 **PUT-IT IN THE BOWL** – *wants cereal in bowl (not cup)*
 21.11 **PUT-IT IN THE GARBAGE** – *doing it*
 21.12 **PUT WEEZER IN THE OUTSIDE** – *leaving him outside*
 21.13 **PUT THAT IN THE BOX** – *doing it*
 21.14 **STICK THE FINGER IN MY JELLY** – *doing it*
 21.16 **APPLE JUICE IN MY CUP** – *wants it*
 21.16 **HAVE JUICE IN MY BOTTLE** – *wants it*
 21.17 **SEE MY BOTTLE IN MY SILK** – *bottle wrapped in blanket*
 21.19 **SEE CRAYONS IN MY MOUTH** – *to Mama*
 21.21 **BEAR DOWN IN THE PEE-PEE** – *she put the bear down in the pee-pee she spilled*
 21.21 **CHICKEN IN THE GRASS** – *they are in picture*
 21.21 **PUT ME IN THE SHOWER** – *wants me (mama) to*
 21.24 **MOMMY PUT-IT IN THE WINDOW** – *telling me (Dada) about the jack-o-lantern*
 21.26 **OTHER BIRD IN THE BUSH** – *picture in book*
 22.03 **STICK-IT IN MY BUTT** – *poking game*
 22.07 **BRING HER IN THERE** – *wants Maria in here*
 22.07 **LEFT MY COAT IN SCHAEFFLE'S HOUSE** – *she did*
 22.07 **LOOK AT ME IN THERE** – *she's in pipe (here)*
 22.07 **TAKE THE PAPER IN THE GARBAGE** – *putting it in*
 22.27 **THERE'S ROCKS IN HERE** – *walking in pebbles (half in, half out of ground)*
 23.00 **IN MY NIGHTGOWN** – *answer to "where did you pee-pee"*
 23.00 **RUB-IT IN MY HAIR** – *doing it*
 23.00 **WHAT HAPPENED IN THERE?** – *question*
 23.00 **WHAT'S THAT CAR DOING IN THERE?** – *question*
 23.00 **WHAT'S THAT DOING IN THERE?** – *question*
 V23.00 **MY SPOON . . . IN MY CUP** – *playing*
 23.25 **IN HOME** – *answer to question (sometimes says "at home")*
 23.25 **PETE COME WITH ME IN THE GROCERY STORE** – *expresses desire as she goes in*
 24.28 **I WANT TO GET IN YOUR LAP** – *she does*

OUT

Parent Use: "Let's take it out" or "Let's throw it out"

Single-Word Use and Use in Combination:

- A18.25 OUT ... TAPE OUT – *trying to take tape out of box*
 A18.25 SILK ... OUT – *throwing it (blanket) off couch*
 A18.25 OUT ... THAT OUT – *throwing paper off couch (three times)*
 V18.25 OUT THIS – *getting self out of large box*
 19.07 HURT EYES... THIS... OUT EYES – *she had gotten pepper in her eyes*
 19.08 PEN OUT – *trying to get pen out from under refrigerator*
 19.14 NAIL OUT – *the hole in the picture it hangs (no nail)*
 19.16 BALL OUT – *wants ball out of car*
 19.18 MATCHES OUT – *as she takes them from small box*
 19.18 MONEY OUT – *as she takes it from small box*
 19.30 PEN OUT – *taking it out of my pocket*
 20.17 GET OUT ME – *she wants out of track*
 20.19 RUBBER BAND OUT MOUTH – *wants it out*
 20.24 STICKING OUT – *to a protrusion of a scarf out of a pocket*
 20.27 TAKE THESE THINGS OUT DADDY'S OFFICE – *taking things to Daddy's office (out - outside?)*
 20.29 MARIA FALLING OUT CAR – *she is*
 21.00 GET ME OUT THERE – *wants out of shopping cart*
 21.06 CAME OUT SILK – *a string which she pulled*
 21.22 GET ME OUT OF MY BED – *wants someone to*
 22.06 TAKE THESE PAPER-TOWELS OUT OF CABINET – *she is*
 22.07 SMOKE COMING OUT THE COFFEE – *it is*
 22.27 IT'S COLD OUT HERE – *opening door to outside, she stays inside*
 23.00 TAKE THESE OUT – *taking feet out of pajamas with feet (usually says off)*
 23.25 COME OUT MAX – *inviting dog to go out door*
 23.25 SMOKE COMING OUT THE CHIMNEY – *she sees it*
 23.25 SMOKE COMING OUT THE HOUSE – *she sees it*
 23.26 YOU GET YOUR CIGARETTES OUT OF HERE – *they are on the table in her way*

OVER (location only)

Parent Use: no notes

Single-Word Use: none

Use in Combination:

- 19.11 NI-NI OVER HERE – *pointing to her playpen*
 19.23 MATCHES OVER HERE – *putting it in pile*
 V19.26 HI, UNDER THERE – *discovers toy under chair*
 20.04 OVER HERE NAVY-SCHOOL – *wants to go across street to Navy School*
 20.06 DADDY LOOK OVER HERE – *commanding me to (a mop)*
 20.24 ALL OVER PLACE – *a mess*
 21.10 DREW MICKEY MOUSE ALL OVER PLACE – *she had drawn all over picture*
 21.16 SEE THAT RIGHT OVER THERE – *pointing*
 21.19 SEE THE BIRD OVER THERE – *to Mama*

- 21.22 THAT'S DADDY OVER THERE – *telling Mama*
 21.24 THAT DANNY'S PUMPKIN OVER THERE – *pointing next door*
 22.05 SPILL SOMETHING OVER MOMMY'S COAT – *sees stain*
 A23.00 TURN THE RECORD OVER – *wants other side of record (two times)*
 A23.00 TURN IT OVER – *wants other side of record*

UNDER

Parent Use: no notes

Single-Word Use: none

Use in Combination:

- 19.16 HI POKER... UNDER CAR... POKER UNDER CAR – *crawling under car after Poker (cat)*
 19.22 THIS BALL UNDER HERE – *crawling under car for ball*
 19.23 CRACK GONE... UNDER MOMMY – *Mama is lying on crack in playpen*
 19.23 UNDER HERE – *putting chair under table*
 19.30 MOMMY UNDER – *wanting me (Mama) to go under covers*
 20.00 MOMMY UNDER HOUSE – *wants her under table (house)*
 20.12 UNDER SEE THE FLOWERS – *going under leg to get to flowers*
 20.21 HERE-IT IS UNDER THIS BALLOON – *looking for blanket, finds it (balloon under blanket)*
 20.24 BODY-BOOK UNDER THERE – *it's under car seat*
 22.27 WHAT'S THAT UNDER HERE – *outside playhouse, looking in (there)*

HERE

Parent Use: no notes

Single-Word Use: none

Use in Combination:

- 19.01 CREME SANDWICH HERE – *point to some on Mama's face*
 19.11 NI-NI OVER HERE – *pointing to her playpen*
 19.12 RIGHT HERE SQUITO BITE – *pointing to a spot on Mama*
 19.15 STAY HERE RUG – *we're taking it outside*
 19.16 DOWN THIS RIGHT HERE – *putting cards on ground*
 19.17 STAY HERE – *she doesn't want to come to me (Dada)*
 19.18 POKER RIGHT HERE – *pointing*
 19.18 STAY HERE BREAKFAST – *doesn't want table cleared*
 19.20 HERE THIS PEN – *finding it*
 19.21 HERE THIS MOMMY – *handing her a feather*
 19.22 DOWN HERE GRASS – *putting leaf down*
 19.22 HERE THE MORE CRAYONS – *picked up one, and said "crayon;" another and said "more crayons," then says to Mama*
 19.22 HERE WIND – *wind, she's looking at tree*
 19.22 THIS BALL UNDER HERE – *crawling under car for ball*
 19.23 BLOW ON THIS HERE – *wants Mama to blow on new toy*
 19.23 DROP-IT HERE – *dropped toy from car seat*
 19.23 HERE BRUSH – *putting it in pile*

- 19.23 HERE THE FAN – *pointing*
 19.23 MATCHES OVER HERE – *putting it in pile*
 19.23 PILLOW DOWN HERE – *pushing it off another pillow to ground and lying on it*
 19.23 RIDE IN HERE – *she's riding in seat that moves*
 19.23 UNDER HERE – *putting chair under table*
 19.23 WALKING HERE FUNNY – *walking on couch*
 19.25 HERE – *where she's attending (usually close)*
 19.25 HERE THIS PLAYPEN – *grabbing it*
 19.25 OVER HERE – *same as "here"*
 19.25 RIGHT HERE – *where she's pointing*
 V19.26 HERE IT IS – *finding key in purse (looking for it)*
 V19.26 BOWL DOWN HERE – *putting it down on floor*
 V19.26 DOO-DOO DOWN HERE – *it is*
 V19.26 GO AWAY HERE – *erasing Mama's picture (after her own)*
 V19.26 HERE IT IS – *finding chalk (looking)*
 V19.26 DOWN HERE – *putting bowl on floor*
 V19.26 PANTS OFF HERE – *throwing them off*
 V19.26 NOSE ON HERE
 A19.27 RIGHT HERE – *pointing where she wants jelly*
 A19.27 HERE THIS – *finding a spill*
 19.28 CHECKBOOK RIGHT HERE – *wanted to put it where she was standing*
 19.29 BALL IN HERE – *wants me to put golf ball in paper slot*
 19.29 DOWN HERE GROUND – *putting glasses down*
 19.29 FALL-DOWN HERE GROUND – *telling Mama (happened yesterday)*
 19.29 HERE THIS DADDY'S HAT – *handing me Daddy's hat*
 20.01 WEEZER DOWN HERE – *putting her down on floor*
 20.04 OVER HERE NAVY SCHOOL – *wants to go across street to Navy School*
 20.05 STAR BACK HERE – *star on the seat of my (Dada's) pants*
 20.06 DADDY LOOK OVER HERE – *commanding me to (a mop)*
 20.06 MARIA'S UMBRELLA HERE – *pointing*
 20.06 STEPPIN RIGHT HERE – *pointing for me where she had stepped*
 20.11 STICK A FOOT IN HERE – *in empty coke six-pack*
 20.15 PIECE OF ICE DOWN HERE TABLE – *putting it on table*
 20.23 GET ME OFF HERE – *wants out of swing*
 20.24 COME BACK HERE POPCORN – *it fell away, grabbing it*
 22.03 COME BACK HERE – *demand to Maria*
 22.27 IT'S COLD OUT HERE – *opening door to outside, she stays inside*
 22.27 THERE'S ROCKS IN HERE – *walking in pebbles (half in, half out of ground)*
 22.27 WHAT'S THAT UNDER HERE – *outside playhouse, looking in (there)*
 V23.00 HERE IS THE JELLO – *pretend*
 24.28 LET ME STAND RIGHT HERE BY YOU – *walking over to Mommy to listen to record*

THERE

- 19.16 WATER THERE – *pointing to puddle*
 19.21 PUT-IT IN THERE – *wants to put ice in glass*

- 19.22 BUGS IN THERE – *turned over chairs and saw spider webs with spider*
 19.23 HOUSE ON THERE – *on label of syrup*
 19.23 NOSE ON THERE – *pointing to toy's nose*
 19.23 PUT-IT IN THERE – *putting paper in glass*
 19.23 RABBIT ON THERE – *on TV*
 19.23 RIA'S SHIRT ON THERE – *wanted to keep dress on*
 19.24 GROVER OFF THERE
 19.24 HANDS ON THERE – *putting Grover on her hands*
 19.24 RAISIN IN THERE – *raisin's in oven*
 19.25 MARIA GET OFF THERE – *wants her to (toy)*
 19.26 BACON IN THERE – *in the bagel*
 19.26 ELEPHANTS ON THERE – *on TV*
 19.26 ELF ON THERE – *wants hat off head*
 19.26 GROVER OFF THERE – *wants it off Mama's hand*
 19.26 GROVER ON THERE – *wants it on Mama's hand*
 V19.26 ON THERE – *pointing*
 V19.26 HI UNDER THERE – *toy under chair*
 19.27 GLASSES ON THERE – *she put them on*
 19.27 HOLE THERE – *pointing at hole*
 19.27 PIGTAIL OFF THERE – *taking it off*
 19.27 RUBBER BAND OFF THERE – *her leg*
 19.27 RUBBER BAND ON THERE – *on her leg*
 19.29 FALL-DOWN THERE – *saw spoon behind bed backboard*
 19.29 SPOON DOWN THERE – *saw spoon behind bed backboard*
 19.30 BIB ON THERE – *I was putting bib on her*
 19.30 GET OFF THERE – *wants off my back*
 19.30 SHOES OFF THERE – *taking hers off*
 19.30 SOCKS OFF THERE – *taking hers off*
 19.30 SOCKS ON THERE – *putting sock on*
 20.00 SOCK OFF THERE – *wants it off (asking Mama)*
 20.00 WATER IN THERE – *looking at boiling water*
 20.01 HAIR OFF THERE – *wants hair off raisin*
 20.01 MARSHMALLOW STUCK ON THERE – *on moose horns in book*
 20.01 PICTURE IN THERE – *opening songbook and closing*
 20.01 PUT GROVER ON THERE – *wants him on her hand*
 20.01 SKATES ON THERE – *pretending skating, has on Mama's shoes*
 20.01 WATCH SQUARES ON THERE – *wants a specific TV program*
 20.02 B IN THERE TENNIS – *a "w" on a tennis racket*
 20.04 HAT ON THERE – *putting top on acorn*
 20.06 NAIL OFF THERE – *wants it off (out)*
 20.06 STUCK THERE – *the mop is stuck in monkey bars*
 20.07 DRESS ON THERE – *putting it on*
 20.07 TOYS IN THERE – *telling us they are*
 20.08 PEOPLES ON THERE BOAT – *people in boat*
 20.19 FINGERS IN THERE KETCHUP – *putting her finger in it*
 20.19 NEW RUBBER GLOVES ON THERE – *wants them on hands*
 20.19 PUTTING SPOONS IN THERE – *putting them in kitchen*
 20.21 SHOES ON THERE – *see them on clothesline*

- 20.23 GET ME UP THERE – *wants on top of slide*
 20.24 BODY-BOOK UNDER THERE – *it's under car seat*
 20.25 GLUCK ON THERE – *mildew on purse*
 20.25 ON THERE ME – *wants on swing*
 20.27 PIECE OF ICE IN THERE – *it's in a glass*
 20.28 GET ME OFF THERE – *wants off swing*
 21.00 GET ME OUT THERE – *wants out of shopping cart*
 21.09 SNAP BACK RIGHT THERE – *rubber band*
 21.10 PUT RAISINS UP THERE – *on shelf, doing it*
 21.10 PUT THAT BOTTLE UP THERE – *putting it on ledge*
 21.16 SEE THAT RIGHT OVER THERE – *pointing*
 21.19 SEE THE BIRD OVER THERE – *to Mama*
 21.22 THAT'S DADDY OVER THERE – *telling Mama*
 22.02 TAKE THAT OFF THERE – *wants toy off her paper (drawing)*
 22.03 COME BACK THERE SEE FLINTSTONES – *in store*
 22.04 I SEE YOU UP THERE – *I'm in the tree*
 22.04 I SEE YOU UP THERE AGAIN – *I'm (Dada) in the tree*
 22.04 PUT-IT UP THERE BY THE WINDOW – *placing toy on window-sill*
 22.07 BRING HER IN THERE – *wants Maria in here*
 22.07 COME UP THERE – *wants me to come to her (here)*
 22.07 LOOK AT ME IN THERE – *she's in pipe (here)*
 22.27 WIPE THIS OFF THERE – *wiping shoes (mud) on board*
 23.00 WHAT HAPPENED IN THERE – *question*
 23.00 WHAT'S THAT DOING IN THERE – *question*
 V23.00 THERE IT IS
 23.25 GO BY THERE – *wants me to take a turn in car*
 24.28 YOU STAY RIGHT THERE AND I THROW IT TO YOU – *tells me to and then throws ball*

4.5. Movement of objects

STUCK

Parent Use: asking T “Are you stuck?” or asking her if the bottle is “Stuck” (stopped up)

Single-Word Use:

- 15.18 STUCK – *can't get foot out of baby carriage*
 15.19 STUCK – *toy phone she is dragging stuck behind chair*
 15.19 STUCK – *juice stuck in bottle (stopped up)*
 15.21 STUCK – *shirt stuck on drawer so can't walk*
 15.22 STUCK – *can't get wallet open*
 15.23 STUCK – *can't get top off bottle*
 15.24 STUCK – *can't get faucet to turn*
 15.27 STUCK – *can't get ball of yarn out of jar*
 16.02 STUCK – *can't get tape off hand*
 16.15 STUCK – *toy rake she is pulling stuck between chair and table*

- 16.17 STUCK – *can't pull Mama's arms apart to play game*
 16.18 STUCK – *can't lift brick*
 16.18 STUCK – *can't pull sock off foot*
 16.19 STUCK – *can't pull band-aid off arm*
 16.20 STUCK – *can't get hand into baseball glove*
 16.24 STUCK – *can't get puppet off spool*
 16.25 STUCK – *can't get stick supporting window to come out*
 17.00 GET-IT ... STUCK – *can't get pen out from under car seat*
 17.00 STUCK – *can't get down from high chair*
 17.03 STUCK – *can't pull chair out from under table*
 17.03 STUCK – *can't get down from table*
 17.06 STUCK – *can't get rubber band off finger*
 17.07 STUCK – *can't get off big bed*
 17.07 STUCK – *can't pull life jacket out from under boat seat*
 17.07 STUCK – *can't open door*
 V17.26 STUCK – *can't get ball out of cup*
 V17.26 MAMA ... STUCK – *can't lift heavy chain*
 V17.26 STUCK – *can't stir blocks in bowl very well*
 V17.26 STUCK – *ball won't go in cup*
 V17.26 STUCK – *can't pick up penny*
 A18.25 STUCK – *can't pull towel down*
 V18.25 STUCK – *can't get key into lock to open doors (two times)*
 V18.25 STUCK – *can't get apple out of cup (three times)*
 V18.25 STUCK – *can't get scarf off (seven times)*

Use in Combination:

- 17.05 WHERE STUCK – *looking through book for picture of man stuck*
 17.16 BABY STUCK – *can't get down off bed*
 18.03 BABY STUCK – *her shirt is pinning her arms*
 18.18 BITE STUCK – *Mama is trying to bite tag off dress*
 18.30 STUCK THIS – *her legs stuck behind couch*
 18.30 STUCK THIS – *pillow won't move (she's pulling)*
 18.30 STUCK THIS WEEZER PILLOW – *same as previous entry*
 19.02 STUCK PILLOW – *the pillow is stuck (she pulls)*
 19.03 STUCK BOTTLE – *the bottle is stuck (stopped up)*
 19.04 STUCK THIS DADDY – *the sheet is stuck under daddy, she is pulling it*
 19.05 BIG ROCK STUCK – *trying to pull rock out of pipe*
 19.06 STUCK BOOK – *book stuck under pillow*
 19.06 STUCK THAT BOOK – *book stuck under pillow*
 19.13 STUCK ON BOWL – *a bubble is stuck on a bowl*
 19.18 STUCK CHAIR – *she's stuck between chair and couch*
 20.01 MARSHMALLOW STUCK ON THERE – *on moose horns in book*
 20.06 STUCK THERE – *the mop is stuck in monkey bars*
 20.26 COME GET ME STUCK – *she is stuck and needs help*
 21.02 THAT STRING'S STUCK ... COME HELP ME – *wants string needs help getting it*

MOVE

Parent Use: telling dogs and T to get out from under foot (especially when parents carrying something, especially in doorway)

Single-Word Use:

- 15.26 MOVE – *telling dogs (in doorway) to move out of her way*
- 15.27 MOVE – *telling dogs (licking her face) to leave her alone*
- 15.28 MOVE – *telling herself to get out of Mama's way (Mama is carrying ironing board)*
- 15.28 MOVE – *telling vacuum cleaner to get out of her way*
- 15.30 MOVE – *telling daddy to get out of her way (he is blocking access to a toy)*
- 16.23 MOVE – *telling weeds to get out of her way (she's stuck in them)*
- 17.17 MOVE, MARIA – *wants Maria to move*
- V19.26 MOVE, MARIA – *telling Maria to make room for her in chair she is in*

Use in Combination:

- 18.25 MOVE BROOM – *can't walk around it in doorway*
- 19.01 MOVE BRUSH – *tells it, then moves it*
- 19.01 MOVE PEARS – *tells it, then moves it*
- 19.02 MOVE TRAY – *wants it to move, does it*
- 19.03 MOVE DADDY TRAY – *moving ashtray*
- 19.04 MOVE DADDY – *off her table*
- 19.04 MOVE MOMMY – *off her table*
- 19.04 MOVE TEDDY BEAR – *wants to lie down, teddy bear book in way*
- 19.04 MOVE THE GARBAGE – *moving it out of her way*
- 19.10 MOVE THE CHAIR... MOVE MOMMY – *as doing it (Mama's feet on chair)*
- 19.19 MOVE CAROL – *wants her to*
- 19.30 MOVE BRICK – *brick on sandbox seat*
- 20.01 FIRST MOVE THIS – *needs cloth moved to sit down*
- 20.17 MOVE PAJAMAS OFF CHAIR – *while doing it*

STAY

Parent Use: telling dogs to stay in car, in house; telling T she is to stay

Single-Word Use:

- 16.24 STAY – *telling dogs to stay in car*
- 17.00 STAY – *telling dogs to stay in yard as car leaves*
- 17.14 STAY – *telling dogs to stay in house as we open door*
- 17.20 STAY – *telling dogs to stay in her room*
- 17.21 STAY – *telling dogs to stay and not try to get her food*

Use in Combination:

- 19.15 STAY HERE RUG – *we're taking it outside*
- 19.17 STAY HERE – *she doesn't want to come to me*
- 19.18 STAY HERE BREAKFAST – *doesn't want table cleared*
- 19.19 STAY PETE – *command to dog*

- 19.20 STAY CINNAMON – *telling her to*
24.28 YOU STAY RIGHT THERE AND I THROW IT TO YOU – *tells me to and then throws ball*

GO

Parent Use: (a) “Look at that go,” to cars. etc.; (b) “Let’s go” as a stimulus to get ready; (c) her friend has to go

Single-Word Use:

- 17.04 GO – *commenting on fast car*
17.06 GO – *commenting on jogger running past*
17.28 GO – *commenting on our leaving in the car*
18.24 GO – *requesting that slow parents get moving as preparing to leave in car*

Use in Combination:

- 17.14 MARIA GO – *as she’s leaving*
18.20 GREEN GO – *light turns green, we go (in car)*
20.03 PETE GO WITH ME GARBAGE-MAN – *Pete is chasing garbage man*
21.09 DOODOO GOES IN THE WATER IN THE POTTY – *as pouring it from potty into toilet*
21.27 GO SEVEN-ELEVEN BUY MORE COCA-COLA – *wants to*
V23.00 GO TO THE NEW PLAYGROUND? – *asking if she can*
V23.00 SQUARES GOING DOWN THE STREET – *about previous TV show*
A23.00 DOES IT GO, DADDY? – *about toy*
23.25 GO BY THERE – *wants me to take a turn in car*
23.25 GO TO BED – *comment on her own activity*
23.25 GO TO LINDA’S HOUSE – *comment on her own activity*
23.25 GO TO STORE – *request that we do*
23.26 I GO OUTSIDE TALK TO MARIA . . . SHE COME HERE – *asking if she can*

COME

Parent Use: (a) to call dogs or T (come-on and come-here); (b) to answer door (come-in)

Single-Word Use:

- 18.15 COME-HERE – *calling dogs*
18.16 COME-ON – *beckoning parents to hurry*
18.25 COME-ON, MOMMY – *wants her to play (she’s talking)*
18.25 COME-ON, POKER – *calling the cat*
18.25 PETE, COME-HERE – *calling the dog*
18.25 MOMMY, COME-HERE – *wants her to*
18.25 DADDY, COME-HERE – *wants him to*
19.00 COME-HERE, MARIA – *wants her to*
19.01 COME-IN – *answering door*
19.16 COME BACK – *wants dog she was playing with to return*
19.18 COME-HERE, LINDA – *wants her to*
19.19 COME-ON, CAROL – *wants her to*

- 19.20 COME-ON, LINDA – *wants her to*
 19.24 COME BACK – *wants Mama to return into room*
 19.26 COME-ON, MOMMY – *wants her to*
 19.26 COME-ON, DADDY – *wants him to*
 V19.26 COMING – *announcing her arrival*
 A19.27 COMING – *Mommy is*
 V23.00 COME-ON, MOMMY – *wants her to*

Use in Combination:

- 19.05 COME-IN OUTSIDE – *pulling at door to go outside*
 19.10 COME-IN TOO – *dog just did, she wants to*
 19.14 MARIA COME-IN – *she wants her to*
 19.30 BIRTHDAY CAKE COME IN TOO – *wanted to take sand inside*
 20.04 BOTTLE COMING TOO – *asking to bring bottle*
 20.06 COME-ON MOMMY SHIRT OFF
 20.24 COME BACK HERE POPCORN – *it fell away, grabbing it*
 20.24 COME WITH ME – *she wants to go*
 20.26 COME GET ME STUCK – *she is stuck and needs help*
 20.27 COME-ON SIT ME – *wants Mama to sit with her*
 21.02 THAT STRING'S STUCK . . . COME HELP ME – *wants string, needs help getting it*
 21.03 MOMMY COME-ON IN LIVING ROOM – *calling her*
 22.03 COME BACK HERE – *demand to Maria*
 22.03 COME BACK THERE SEE FLINTSTONES – *in store*
 22.07 COME UP THERE – *wants me Dada to come to her (here)*
 22.07 SMOKE COMING OUT THE COFFEE – *it is*
 23.25 COME OUT MAX – *inviting dog to go out door*
 23.25 DOG AND KITTY COME WITH ME IN THE AIRPLANE – *request as she's nearing airport*
 23.25 PETE COME WITH ME IN THE GROCERY STORE – *expresses desire as she goes in*
 23.25 SMOKE COMING OUT THE CHIMNEY – *she sees it*
 23.25 SMOKE COMING OUT THE HOUSE – *she sees it (same situation)*
 23.25 CLOUDS COMING WITH ME – *in car*

CAME

- 21.06 CAME OUT SILK – *a string she had pulled out*
 21.12 CAME OFF GROVER – *she broke string off Grover*
 21.13 THAT THING CAME OFF CORN – *a kernel of corn*
 21.13 THAT CAME OFF RUG – *a piece of yarn*

BRING

Parent Use: telling T to bring them something

Single-Word Use:

- 18.30 BRING – *comment on her bringing chair to table after instructed*

- 19.03 BRING – *comment on her bringing doll to Mama after instructed*
- 19.10 BRING – *instructing Mama to bring her her doll*

Use in Combination:

- 19.03 BRING CHAIR – *bringing it into room*
- 19.09 BRING BASKET – *requesting that Mama do so*
- 19.14 BRING BALL – *request to Daddy to fetch it from bushes*
- 20.06 BRING JELLY NOW – *wants me to (I'm in kitchen)*
- 20.06 BRING MILK – *wants me to bring in lunch*
- 20.06 BRING SALAD – *I am bringing in lunch*
- 20.14 BRING THIS WEEZER PILLOW UP-HERE – *up into Mama's lap*
- 21.09 BRING A PAPER-TOWEL WIPE ME OFF – *command to Mama*
- 21.10 THANKS MOMMY BRING A CHIPS – *Mama brought them to her*
- 22.07 BRING HER IN THERE – *wants Maria in here*
- V23.00 BRING THAT FOR DADDY – *she is*

TAKE

Parent Use: no notes

Single-Word Use: none

Use in Combination:

- 19.28 DADDY TAKE A DA BOTTLE – *while looking for bottle*
- 19.29 MOMMY TAKE BALL – *remembering*
- 20.00 BLUE TRUCK GONE . . . DADDY TAKE IT – *statement, then response to question "where did it go"*
- 20.00 DADDY TAKE-IT THE MATCHES – *answer to "where are the matches"*
- 20.03 DADDY TAKE A SPONGE – *she can't find it*
- 20.03 DADDY TAKE TO MARIA'S – *wants me to*
- 20.11 TAKE-A-TEMPERATURE BUTT – *anticipating Mama*
- 20.12 DADDY TAKE BOTTLE SCHOOL – *when she couldn't find her bottle (Dada had just left for school)*
- 20.20 TAKE THIS KEY OFF – *wants key out of door*
- 20.22 TAKE THIS DRESS OFF – *wants me to (doll)*
- 20.23 TAKE THIS PAPER OFF – *doing it (off package)*
- 20.27 TAKE THESE THINGS OUT DADDY'S OFFICE – *taking things to Daddy's office (out = outside?)*
- 21.00 TAKE THE SKIN OFF – *wants it off her apple*
- 21.01 TAKE THAT BELT OFF ME – *wants her belt off*
- 21.03 TAKE THIS PAPER OFF – *taking it off crayon*
- 21.04 TAKE SKIN OFF HOT-DOG – *wants Mama to*
- 21.05 TAKE FRED OUTSIDE LUCY TOO – *wants to take them outside*
- 21.30 TAKE MY DIAPERS OFF ME – *while I'm (Mama) doing it*
- 22.02 TAKE THAT OFF ME – *her sweater*
- 22.02 TAKE THAT OFF THERE – *wants toy off her paper (drawing)*
- 22.04 TAKE MORE FIRST – *before we put food up*
- 22.06 TAKE THESE PAPER-TOWELS OUT OF CABINET – *she is*
- 22.07 TAKE THE PAPER IN THE GARBAGE – *putting it in*

- 22.07 TAKE-IT OFF MY MYSELF – *when I offer to take her shoe off*
 23.00 TAKE THESE OUT – *taking feet out of pajamas with feet (usually says off)*
 V23.00 I WANT TO TAKE ONE AT A TIME – *cheetos (chips)*
 23.26 TAKE THIS AWAY AND PUT IT ON THE TABLE – *doing it*

GET + PARTICLE

Parent Use: “Do you want to get out/off/down?” from high chair, stroller, etc.

Single-Word Use:

- 17.06 GET-OUT – *wants out of playpen*
 17.07 GET-OUT – *wants out of stroller*
 17.09 GET-OUT – *wants out of car seat*
 17.14 GET-OUT – *wants out of high chair*
 17.15 GET-OUT – *stuck in trashcan, wants out*
 17.17 GET-OUT – *wants barrette out of hair*
 17.17 GET-OUT – *wants off big bed*
 V17.26 GET-OUT – *wants out of Mama’s lap*
 V17.26 GET-OUT – *wants down from chair (two times)*
 18.14 GET-OUT – *wants off of Daddy’s shoulders*
 19.25 GET-OFF – *wants off bicycle*
 19.26 GET-DOWN – *wants down from Daddy’s shoulders*
 19.27 GET-DOWN – *wants down from bed*

Use in Combination:

- 17.19 MY GET-OUT – *wants off bed*
 17.24 PETE GET-OUT – *wants dog (whining) to be let outside*
 18.06 GET-OUT KISSES – *wanting candy kisses out of wrapper*
 V18.25 GET-OUT THIS – *extricating self from box*
 19.17 WEEZER GET-OUT – *telling cat to get out of sink*
 19.17 ME GET-OUT – *wants Mama to get her out of her high chair*
 19.25 MARIA GET OFF THERE – *wants her to (toy)*
 19.30 GET OFF THERE – *wants off my back*
 20.01 GET GROVER . . . GROVER GET-OUT – *wants Grover out of crib*
 20.08 GET DOWN THIS BOOK – *wants it from top shelf*
 20.11 GET DOWN ME – *wants Mama to get her down*
 20.15 WEEZER GET OFF DADDY’S ROCKING CHAIR – *telling cat*
 20.17 GET OUT ME – *she wants out of track*
 20.22 GET ME OFF – *wants off swing*
 20.22 GET THE SILK OFF – *wants it off her*
 20.23 GET ME OFF HERE – *wants out of swing*
 20.23 GET MOMMY’S PANTS OFF – *moving them off couch*
 20.28 GET ME OFF THERE – *wants off swing*
 21.00 GET ME OUT THERE – *wants out of shopping cart*
 21.22 GET ME OUT OF MY BED – *wants someone to*
 22.04 GET THESE PICKLES OFF MY HAMBURGER – *taking them off*

- A23.00 GET OUT OF THAT CUP – *to bug*
 23.26 YOU GET YOUR CIGARETTES OUT OF HERE – *they are on the table in her way*

PUT

Parent Use: telling T to put things away; commenting on their own activity of putting things away

Single-Word Use: none

Use in Combination:

- 19.16 PUT-IT IN – *putting binoculars in case*
 19.16 PUT-IT ON RING – *pointing to my ring*
 19.21 PUT-IT IN THERE – *wants to put ice in glass*
 19.23 PUT-IT IN THERE – *putting paper in glass*
 19.30 PUT ON MOMMY'S SHIRT – *as I (Mama) was putting on my shirt*
 20.01 PUT GROVER ON THERE – *wants him on her hand*
 20.07 DADDY PUT-A... NEW PAJAMAS ON – *I (Dada) put them on her*
 20.19 PUTTING SPOONS IN THERE – *putting them in kitchen*
 20.20 PUT ON ME – *wants glasses on*
 21.00 PUT HAT ON THESE FEET – *putting it on Fred's feet*
 21.00 PUT THAT FRED ON HAT – *putting Fred's hat on his head*
 21.00 PUT THAT FRED ON HEAD – *putting Fred's hat on his head*
 21.04 PUT SHAMPOO IN A WINDOW – *doing it*
 21.05 HEY, PUT THAT UP – *doing it on shelf*
 21.08 PUT THAT IN THE ICE – *she is putting ice back in glass*
 21.08 PUT UP SKY – *she wants to be lifted*
 21.10 PUT RAISINS UP THERE – *on shelf, doing it*
 21.10 PUT THAT BOTTLE UP THERE – *putting it on ledge*
 21.10 PUT IT IN THE BOWL – *wants cereal in bowl (not cup)*
 21.11 PUT IT IN THE GARBAGE – *doing it*
 21.12 PUT WEEZER IN THE OUTSIDE – *leaving him outside*
 21.13 PUT THAT IN THE BOX – *doing it*
 21.15 PUT NEW PAJAMAS OFF – *means "take off"*
 21.17 PUT MY NEW COAT ON ME – *wants Mama to*
 21.18 PUT MOTHER GOOSE ON – *wants this record on*
 21.21 PUT ME IN THE SHOWER – *wants me to*
 21.24 MOMMY PUT-IT IN THE WINDOW – *telling me about the jack-o-lantern*
 21.29 PUT MY SHOES BACK ON – *she took them off*
 22.01 PUT MILK ON-IT – *her cereal*
 22.02 PUT MY TOOTHBRUSH DOWN – *doing it*
 22.04 PUT IT BACK – *takes orange off counter, puts back*
 22.04 PUT IT UP THERE BY THE WINDOW – *placing toy on window sill*
 V23.00 PUT MY KEYS DOWN – *she is*
 V23.00 PUT IT IN THE DRINK – *a straw (two times)*
 V23.00 PUT IT IN THERE – *same as previous entry*
 V23.00 PUT IT UP HERE – *chalk in tray*

- V23.00 AND PUT IT ON ME – *piece of jewelry*
 V23.00 PUT IN HERE – *as she does*
 V23.00 PUT IT IN MY POCKET – *as she does*
 V23.00 PUT IT IN THAT – *as she does*
 V23.00 PUT MY SPOON BACK IN MY CUP – *as she does it*
 23.25 PUT THE 9 BY THE LETTER M – *doing it on magnet board*
 23.26 TAKE THIS AWAY AND PUT-IT ON THE TABLE – *doing it*

4.6. State of objects

OPEN

Parent Use: “Do you want it open?” “I’ll open it”

Single-Word Use:

- 17.23 OPEN-IT – *wants door open to go outside*
 17.23 OPEN – *wants jar of jam open*
 17.24 OPEN-IT – *wants box of cookies open*
 17.25 OPEN – *wants Mama to open her hand*
 V18.25 OPEN-IT – *commenting on Daddy making doll open door with key*
 V18.25 OPEN-IT – *wanting to use keys to open doors (four times)*
 A19.26 OPEN – *wants bottle open (two times)*
- Use in Combination:
- 17.27 OPEN DOOR – *wants it open (tugging at knob)*
 18.12 OPEN BOOK – *it’s closed, she wants it open*
 18.16 OPEN THIS – *wants cereal box open*
 18.21 OPEN BOOK – *wants Mama to open*
 18.21 SNAKE OPEN – *(snake = key chain) as trying to use keys to open door*
 18.25 OPEN THIS – *wants Dada to open door*
 V18.25 OPEN DOORS – *she is trying to with key (eight times)*
 V18.25 OPEN THIS – *she wants to be held up so she can use key in door (five times)*
 V18.25 OPEN THIS – *wants Mama to take top off pen (two times)*
 V18.25 OPEN-IT KEYS – *trying to open door with keys*
 V18.25 OPEN-IT DOORS – *trying to open door with keys*
 18.27 OPEN THE UMBRELLA – *wants umbrella open*
 18.27 OPEN THIS – *wants umbrella open*
 18.28 OPEN DOOR – *wants to (key in hand)*
 18.29 DOOR OPEN – *wants it open*
 19.01 OPEN MOUTH – *so she could brush Mama’s teeth*
 19.03 OPEN THIS CRACKER – *package of crackers (doing it)*
 19.04 OPEN CRAYONS – *wants Mama to (box closed)*
 19.04 OPEN SYRUP – *wants me to open it and give her more*
 19.04 OPEN TEETH – *trying my mouth, teeth closed, she opens lips, wants me to open teeth*
 19.05 OPEN THE BUTTON – *doing it on a doll*
 19.07 OPEN THE TOP – *wanted me to take top off honey*

- 19.09 OPEN DOOR – *wants it open*
- 19.09 OPEN TOP – *trying to open top of box*
- 19.20 DOOR OPEN – *telling us it is*
- 19.20 OPEN THIS CARDS – *card pile, wants next one*
- 19.20 OPEN WINDOW – *wants it open*
- 19.22 DADDY OPEN THIS TOP – *medicine bottle (wants off)*
- 19.22 OPEN THIS PAPER – *off popsicle (wants me to)*
- 19.23 PLEASE OPEN THE CANDIES – *asking dog to open mouth to see teeth (candies = teeth)*
- V19.26 OPEN DOORS – *trying to open doors with key (four times)*
- V19.26 OPEN THIS DOOR – *wanting to*
- V19.27 DOORS OPEN – *wants doors open (four times)*
- 19.29 OPEN THIS CAN – *wants me to*
- 19.30 WATCH ME DOORS OPEN – *getting in cabinet (meant to say close)*
- 20.00 OPEN THIS ONE NOW – *wants her umbrella open*
- 20.00 OPEN THIS ONE TOO – *wants umbrella open, Mama fixing dryer*
- 20.01 OPEN THIS WATER – *wants help with spigot*
- 20.04 OPEN THIS ONE NOW – *wants acorn open*
- 20.08 OPEN THIS TOP SHELF – *trying to after I refused to help*
- V23.00 OPEN THIS – *wants doors open (two times)*

CLOSE

Parent Use: “Close the door,” “I’ll close it,” etc.

Single-Word Use:

- 17.21 CLOSE-IT – *trying unsuccessfully to push door closed*
- 17.25 CLOSE – *wants Mama to close hand in game*
- A18.25 CLOSE-IT – *trying to close window*
- V18.25 CLOSE – *Daddy doing it and asking what he did (two times)*
- V18.25 CLOSE-IT – *closing box*

Use in Combination:

- 18.29 CLOSE THIS – *door (closing it)*
- 18.30 CLOSE THIS WINDOW – *trying to*
- 18.30 CLOSE THIS – *magazine (doing it)*
- 19.14 CLOSE WINDOW – *command to me*
- 19.20 CLOSE DOOR – *wants it closed*
- 19.20 CLOSE EYES – *wants Mama to*
- 19.23 CLOSE IT THIS DOOR – *wants it closed*
- A19.27 CLOSE-IT WINDOW, DADDY – *wanting him to*
- 19.30 WINDOW CLOSE – *wants it closed*
- 20.11 BUTT CLOSED – *doesn’t want her temperature taken*
- 22.05 CLOSE YOUR EYES – *command to Maria*

WOOPS

Parent Use: for accidental spills, drops, etc.

Single-Word Use (ONLY):

- 16.18 WOOPS – *as she falls*

- 16.19 WOOPS – *as friend fell*
 16.24 WOOPS – *as toy falls*
 16.24 WOOPS – *as milk spills*
 V16.25 WOOPS – *as she drops cup*
 V16.25 WOOPS – *as she drops toy*
 V16.25 WOOPS – *as she drops cup*
 V16.25 WOOPS – *as Mama drops object*
 17.00 WOOPS – *as she drops toy accidentally*
 V17.26 WOOPS – *as she sits*
 A17.26 WOOPS – *as she drops things (four times)*
 V18.25 WOOPS... FALL DOWN – *top falls off pen*
 V18.25 WOOPS – *doll and car fall over (two times)*
 V18.25 WOOPS – *drops clown*
 A18.25 WOOPS – *drops matches*
 A18.25 WOOPS – *drops paper*
 A18.25 WOOPS... FALL-DOWN – *drops bottle*
 A19.27 WOOPS... DROPPED IT – *her cup*

UH-OH

- V16.25 UH-OH – *as she spills juice*
 V19.26 UH-OH... FALL-DOWN – *the chalk does*
 V19.26 UH-OH... GET-IT – *the chalk*
 V19.26 UH-OH... FALL-DOWN... CHALK FALL-DOWN – *it did*
 A19.26 UH-OH... DROPPED IT – *her fork*

FALL-DOWN

Parent Use: when people fall down

Single-Word Use:

- 17.15 FALL-DOWN... FALL-DOWN – *playing fall down game*
 17.18 FALL-DOWN – *she fell in a pool*
 17.19 FALL-DOWN – *blocks fall down*
 17.21 FALL-DOWN – *man on TV falls down*
 V18.25 WOOPS... FALL-DOWN – *top falls off pen*
 A18.25 WOOPS... FALL-DOWN – *drops bottle*
 V19.26 FALL-DOWN... FALL-DOWN – *afraid she will in chair*

Use in Combination:

- 17.26 FALL-DOWN MAN – *seeing a man fall down*
 17.28 BALL FALL-DOWN – *ball falls out of tree*
 17.28 FALL-DOWN MAN – *as man falls down on TV*
 V18.25 TV FALL-DOWN – *monitor is off camera on table (on side)*
 A19.27 DANNY FALL-DOWN – *he did day before*
 18.27 BOTTLE FALL-DOWN – *it fell out of bed*
 18.28 FALL-DOWN GARBAGE – *pulling it over*
 18.30 FALL-DOWN WEEZER – *dropping him*
 19.00 POPSICLE FALL-DOWN – *it fell*
 19.03 FALL-DOWN BERRIES... FALL-DOWN, MOMMY – *play*

- 19.04 FALL-DOWN JUICE – *she had just spilled it*
 19.05 DANNY FALL-DOWN – *just after he did*
 19.10 FALL-DOWN CHAIR – *picking it up, she didn't see it fall*
 19.16 FALL-DOWN BALL – *she dropped it*
 19.18 FALL-DOWN MARIA'S BIKE – *fell off bike*
 19.19 MARIA FALL-DOWN – *she did*
 19.22 FALL-DOWN CHAIR – *it did*
 V19.26 UH-OH ... FALL-DOWN ... CHALK FALL-DOWN – *it did*
 19.29 FALL-DOWN HERE GROUND – *telling Mama (happened yesterday)*
 19.29 FALL-DOWN THERE – *saw spoon behind bed backboard*
 20.01 CHERRIES FALL-DOWN – *they did*
 20.06 BOX FALL-DOWN – *it fell off steps*
 20.29 MARIA FALLING OUT CAR – *she is*
 21.14 PAJAMA FALLING-DOWN – *hers are*
 22.27 NOT FALL-DOWN PLAYGROUND – *she fell down while swinging days before and is swinging now*
 V23.00 I FELL DOWN – *report on previous event*

DROP

Parent Use: no notes

Single-Word Use: as, or just after she drops something “Drop-it”

- V19.26 DROP-IT – *as she drops eraser*

Use in Combination:

- 18.30 DROP-IT DOWN – *drops berry*
 18.30 DROP-IT ICE – *she did*
 19.07 DROP THE CHECKBOOK – *Mama dropped it*
 19.10 RING DROP-IT – *she did*
 19.13 DROP-IT ICE – *dropped ice*
 19.23 DROP-IT HERE – *dropped toy from car seat*
 19.26 DROP DOWN – *wants to (monkey bars)*
 V19.26 DROPPED-IT BOWL – *she did*
 A19.26 UH-OH ... DROPPED IT – *her fork*
 A19.27 WOOPS ... DROPPED IT – *her cup*
 20.06 POPSICLE DROP-IT – *she did*
 20.09 DROP DOWN TABLE – *wants to (off monkey bars)*
 20.19 DADDY DROPPED PAPER – *he did*
 20.27 COFFEE DROPPED MINE TOE – *it did (crying)*
 V23.00 YOU DROPPED THAT TOY – *comment*
 V23.00 I DROPPED THE KEYS – *she did*

SPILL

Parent Use: no notes

Single-Word Use: as or just after spill, “Spill-it”

- 19.25 SPILLED-IT – *after spilling a liquid*

Use in Combination:

- 19.22 SPILLED-IT A BEARD – *spilled juice on chin (beard = chin)*
 19.23 MOMMY SPILL-IT ON LEG – *telling Mama about spill*
 19.23 SPILL-IT COUCH – *she spilled her juice on couch*
 19.23 SPILL-IT LEG – *telling Daddy about spill*
 19.23 SPILL-IT TABLE . . . MADE-THIS . . . SPILL THIS . . . FALL-DOWN – *telling Chris about spilling juice*
 19.23 SPILL-IT TUMMY – *telling Daddy about spill*
 21.01 I NEVER WILL SPILLED-IT – *after being warned not to spill her drink*
 21.06 SPILLED WEEZER MILK – *she spilled the cat's milk*
 22.05 SPILL SOMETHING OVER MOMMY'S COAT – *sees stain*
 V23.00 I SPILLED IT – *she did (two times)*
 V23.00 I SPILLED THE BLACKBOARD – *on? by?*
 V23.00 WON'T SPILL IT ANYMORE – *promise*

FIX

Single-Word Use: hammering (“Fix-it”); of “Fixing dinner” (18–19 months)

Use in Combination:

- A18.25 FIX THIS – *requesting that Daddy fix yo-yo*
 19.05 FIX-IT CAR – *Chris is fixing his car*
 19.05 FIX-IT RECORD – *it's over, wants to hear it again*
 19.21 FIX-IT FIRE – *wants more charcoal on fire*
 V19.27 FIX DINNER – *in pot (pretend) (two times)*
 20.01 FIX HAMBURGER – *picking up pan (playing)*
 21.27 HAVE MOMMY FIX-IT – *her toy broke*

BREAK

Single-Word Use:

- A17.26 BREAK-IT – *unknown referent*

Use in Combination:

- 19.03 BREAK THIS BITE – *wants her popsicle (bite) broken in half*
 20.19 WEEZER BREAK MY MIRROR – *he banged into it*

BROKEN

Single-Word Use: object not in normal state: light won't work, wagon missing wheel (19 months)

- V23.00 BROKE – *about things (three times)*

Use in Combination:

- 19.03 ICE BROKEN – *crushed ice*
 19.11 BROKEN GLASS – *she broke it*
 19.13 BALLOON BROKEN – *picking up piece of burst balloon*

19.30 BROKE A LIGHT – *pointing to broken kitchen light*

21.12 GROVER BROKEN OFF – *she broke string off Grover*

TEAR

Use in Combination:

20.11 TEAR THIS MINE – *she tore her mask*

CRACK

Use in Combination:

22.07 CRACK THIS FOR MY TEETH – *cracking nut with her teeth*

22.28 CRACK PECAN BY MY TEETH – *cracking it with them*

CHAPTER 5. ACTIVITY VERBS AND SENTENCES

5.1. Activities involving objects

SWEEP

Parent Use: Sweeping with broom

Single-Word Use: using broom (16–17 months)

V16.25 SWEEPING – *as doing it with broom*

V17.26 SWEEP – *as doing it with broom*

Use in Combination:

20.01 SWEEP WEEZER – *chasing cat with broom*

BRUSH (verb only)

Parent Use: Brushing hair or teeth (with appropriate brush)

Single-Word Use: using hair brush (“Brush-it”) (18–19 months)

A18.25 BRUSH...MAN – *brushing man*

Use in Combination:

18.30 BRUSH-IT HAIR – *Mama is brushing Travis’s hair*

19.24 BRUSH-IT STEPS – *water on paint brush, brushing steps*

20.13 BRUSH MY TEETH – *doing it*

WASH

Parent Use: washing hands, dishes, hair, etc.

Single-Word Use: washing hands, dishes, hair, etc. (“Wash-it”) (19–20 months)

V19.26 WASH-IT – *as she is given shampoo for baby-doll’s hair*

Use in Combination:

19.24 WASHING-IT STEPS – *water on paint brush, brushing steps*

19.30 WASH-IT PAPER-TOWEL – *doing it with paper towel*

20.01 WASH-IT HAND – *her hand is dirty*

20.03 WASH FACE – *with sponge (own)*

20.03 WASH LEGS – *with sponge*

- 20.03 WASH THE CAR – *with sponge*
 20.08 WASH THE MOMMY'S EAR – *doing it*
 20.08 WASH THE OTHER EAR – *first one, then the other*

CLEAN

Single-Word Use: wiping using water or a mop (“Clean-it”) (19–20 months)

A19.27 CLEAN-IT – *as cleaning up spill with paper towel (two times)*

A19.27 PAPER-TOWEL . . . CLEAN – *same as previous entry*

Use in Combination:

- 19.00 CLEAN THIS – *sponge on refrigerator*
 19.04 CLEAN DOOR – *wants to, cleaner in hand*
 19.04 CLEAN THIS – *wants to, cleaner in hand*
 20.01 CLEAN THIS PAPER-TOWEL – *cleaning spill with paper towel*
 20.06 CLEAN THIS GRASS – *doing it with a mop*
 20.06 CLEAN THIS MONKEY BARS – *doing it with mop*
 20.06 CLEAN THIS MUDDY – *doing it (stepped in mud puddle)*
 20.06 CLEAN THIS ROCKS – *doing it with a mop*
 20.06 CLEAN THIS ROCKS SAND – *with a mop (doing it)*
 20.06 CLEAN THIS TINY TENT – *doing it with mop*
 20.06 CLEAN THIS UP-HERE – *doing it with mop*
 A23.00 I CLEAN THAT UP – *running to get paper towel (two times)*

PAINT

Use in Combination:

- 19.24 PAINT THE STEPS – *water and paint brush, doing it*

HAMMER (verb use only)

Single-Word Use: hammering with toy hammer (17–18 months)

V17.26 HAMMER – *as banging with toy hammer (two times)*

V18.25 HAMMER – *wanting to (two times)*

Use in Combination:

- 17.17 MOMMY HAMMER – *she hammers, gives Mama hammer and requests*
 18.02 HAMMER TABLE – *doing it*
 18.15 HAMMER BIRDS – *hammering picture of birds*
 18.15 HAMMER THAT – *hammering picture in newspaper*
 18.15 HAMMER THIS – *hammering picture of clown*
 V18.25 HAMMER . . . HAMMER . . . HAMMER THAT – *going around hammering*
 V18.25 HAMMER THIS – *as she does so*
 V18.25 HAMMER DOUGHNUT – *threatening to*
 20.16 HAMMER THIS NOISE – *hammering metal box loudly*

LOCK

Single-Word Use: poking key into lock (18–19 months)

V18.25 LOCK-IT – *wants to*

- V18.25 LOCK . . . DOOR – *as she is doing it*
V19.26 LOCK-IT – *wants to lock doors (two times)*

Use in Combination:

- 18.24 LOCK THAT LULU – *wants picture locked in drawer*

DRAW

Single-Word Use: *as she is drawing (originally “Yaya”) (16–17 months)*

- V17.26 YAYA – *wanting to draw (14 times)*
V17.26 YAYA – *as she is drawing (2 times)*
V18.25 YAYA – *wanting to draw (4 times)*
V18.25 YAYA – *as she is drawing (3 times)*
A18.25 YAYA – *Daddy is drawing*
V19.27 DRAW – *as she does (2 times)*
V19.27 DRAWING – *as she does*

Use in Combination:

- 17.27 YAYA BOOK – *getting ready to draw in book*
17.27 YAYA MANS – *watching Daddy draw a man*
18.06 YAYA PAPER – *wants to draw on paper*
18.12 YAYA PAPER – *while drawing on paper*
18.20 YAYA THIS – *wants to draw on couch*
V18.25 YAYA THIS – *trying to draw on ruler (two times)*
V18.25 YAYA THIS – *indicating picture she has finished*
19.16 DRAW MAN . . . DRAW ME . . . DRAW ME MAN – *wants one drawn on her hand*
19.16 DRAW TOO – *request while watching me write*
19.20 DRAW THIS DOOR – *drawing on door*
19.21 DRAW POO – *she’s drawing on poo*
19.21 DRAW ME – *she’s drawing herself*
V19.26 DRAW THIS – *on sign (three times)*
V19.26 ME DRAW _____ (UNINTELLIGIBLE) – *as she is drawing*
V19.26 DRAW PICTURE CAT – *as she does*
V19.27 DRAW WEEZER – *drawing a picture of cat*
19.29 MARIA TOLD ME DRAW – *remembering*
20.01 DRAW THIS PAPER – *wants to draw, has pen, wants paper*
20.08 DRAW STAR ON ME – *wants Mama to*
20.10 DRAW ON PAPER-PLATE DOWN HERE – *squatting to draw on paper plate on floor*
20.15 DRAW LIKE MARIA – *she and Maria are drawing*
20.22 REAL HARD DRAW – *referring to a picture Mama drew*
21.10 DREW MICKEY MOUSE ALL OVER PLACE – *seeing a picture she drew the day before*
21.13 DRAW ON THE PAPER – *doing it*
23.00 DRAW IT BY SANTA CLAUS – *request*
V23.00 I DRAW
V23.00 I DRAW ON THIS – *as she does*
V23.00 I DRAW ON THE MAN – *as she does*

- 23.26 DRAW SOME HANDS FOR THE MAN – *wants me (Mama) to add hands to my drawing of man*
- 24.28 I WANT TO DRAW WITH STU'S PEN – *I (Mama) have it and she wants it*

READ

Single-Word Use: "Reading" (looking at) book or paper (18–19 months)

A19.27 READ, DADDY – *request*

A23.00 READ, DADDY – *request*

Use in Combination:

A18.25 READ-IT... READ THIS – *(seven times) reading newspaper*

A18.25 READ THIS... BOOK... READ THIS – *request*

18.29 READ THIS – *wants Dada to read book*

18.30 OUTSIDE... READ THIS BOOK OUTSIDE... READ THIS BOOK... READ OUTSIDE – *wants both*

18.30 READ THIS BOOK – *bringing it to Mama*

19.00 READ PICTURES – *album pictures, wants Mama to "read"*

19.10 READ THIS COLOR BOOK – *wants me (Dada) to*

19.18 READ THIS BOOK AGAIN – *request (just finished reading)*

19.22 READ THIS TYSON PAPER – *doing it*

A19.27 READ THIS TYSON PAPER – *she is (two times)*

V23.00 READ YOU... PING – *wants Daddy to read Ping book*

A23.00 READ IT – *requesting*

A23.00 READING A BOOK – *answering "Watcha doing?"*

WORKING

Single-Word Use: usually at desk (19–20 months)

Use in Combination:

20.15 DADDY WORKING REAL HARD – *Daddy writing at desk*

WRITE

Use in Combination:

20.10 WRITE ON DADDY'S CHAIR – *while doing it*

CUT

Single-Word Use: with a knife (17–18 months)

Use in Combination:

19.17 CUT-IT TOES – *with toenail clippers*

19.18 CUT-IT TOES – *with toenail clippers*

20.08 CUT WEEZER – *trying to cut cat with knife*

23.25 CUT IT WITH THE KNIFE – *while Mama doing it*

COOK

Single-Word Use: "cooking" pretend dinners (19–20 months)

Use in Combination:

- V19.26 COOKING DINNER – *she is (pretend)*
- 20.06 ROLLS COOKING – *they are*
- 20.13 STEP COOK DINNER – *stepped on top of pot*
- 21.01 COOKING DINNER – *she is*

COVER

Use in Combination:

- 20.09 COVER ME CLOWN – *she is covering the clown*
- 20.26 COVER ME UP – *wants us to*
- 20.27 COVER BEDUS UP – *covering her (breasts) with blanket*
- 21.05 LAY-DOWN COVER UP – *to her dolls*
- V23.00 COVER ME UP BY MY SILK – *request to be covered by her silk*

BUTTON (verb only)

Use in Combination:

- 20.10 BUTTON THIS ROBE – *wants it buttoned*

RIDE

Single-Word Use: straddling horse, ball, or pillow (17–18 months)

- V18.25 RIDE – *the clown is riding the truck*

Use in Combination:

- 18.01 RIDE HORSIE – *as riding toy horse*
- 18.08 RIDE A BIKE – *getting on*
- 18.20 RIDE AGAIN – *asking to ride (first time of day)*
- V18.25 RIDE CAR – *giving baby-doll a ride in car*
- 18.30 RIDE THIS MOMMY – *riding (straddling mommy)*
- 19.08 BIG BIRD RIDE HORSIE – *on TV*
- 19.18 RIDE THE POOH – *she is riding*
- 19.20 ME RIDE THIS HORSE – *picture of herself on horse (points to self)*
- 19.22 RIDE THIS BICYCLE – *she's on it, wants me to push*
- 19.23 RIDE IN HERE – *she's riding in seat that moves*
- 19.23 RIDE THIS ELEPHANT – *she is*
- 19.24 BOY RIDE ELEPHANT – *he is, toy*
- 19.24 BOY RIDE HORSE – *he is, toy*
- V19.27 RIDE GROVER – *baby-doll on puppet*
- V19.27 RIDE TRUCK – *she is*
- 19.28 RIDE PETE – *getting on the dog*
- 21.13 RIDE ON MOMMY – *doing it*
- 23.00 HOLLY'S RIDING ON DOPEY – *on TV*

DRIVE

Single-Word Use: behind steering wheel in car (sometimes “Driving”) (19–20 months)

Use in Combination:

- 19.00 DRIVING CAR – *wants to*

19.07 DADDY DRIVE KEYS – *saw car keys on hook*

BUMP

Single-Word Use: bumping toy cars into one another (19–20 months)

Use in Combination:

19.22 BUMP THIS CAR – *crash on TV*

CATCH

Parent Use: in game of catch with ball

Single-Word Use: as she throws ball to other person (16–17 months)

Use in Combination:

17.28 CATCH BALL – *command (used to just say “catch”)*

17.28 CATCH, DADDY – *throwing pillow*

17.28 CATCH ROCKS – *command (used to just say “catch”)*

18.13 CATCH, MARIA – *address*

19.00 CATCH THE BALL – *she’s throwing it, wants someone to catch*

19.04 CATCH BUBBLES – *trying to (“got-it” as she does)*

19.27 CATCH THE SILK – *she wants to (wants me to throw it)*

THROW

Single-Word Use: telling other to throw to her; describing her own activity (18–19 months)

Use in Combination:

18.11 THROW DA BALL – *throwing balls in bowl*

18.18 THROW STAIRS – *throwing shoes up stairs*

20.03 THROW THE BOTTLE HANDS – *throwing with hand*

V23.00 THROW THIS AWAY

ROLL

Parent Use: in rolling game with ball

Single-Word Use: request that someone roll ball (sometimes “Roll-it”)

Use in Combination:

17.25 ROLL-IT BABY – *request that Mama roll her (T) the ball*

KICK-IT

Single-Word Use: as she kicks (19–20 months)

Use in Combination:

19.19 KICK-IT BALL – *doing it*

HIT

Single-Word Use: hitting with hand; then using instruments as well (18–19 months)

Use in Combination:

- 18.25 HIT BALL – *boy hits ball*
- 18.30 HIT THIS – *hitting Mama with a spoon*
- 18.30 HIT PIGTAILS – *(barrette) hitting it with racket*
- 19.04 HIT THE WALL – *swings racket, hit wall by accident*
- 19.05 DANNY HIT TENNIS – *got hit in the mouth with t-racket by Danny, crying*
- 19.25 HIT MOMMY – *she's doing it with hand*
- 19.25 HIT-IT DOOR – *doing it (with tennis racket)*
- 19.26 MARIA HIT ME – *earlier in the day*
- 20.15 BECAUSE . . . MARIA HIT ME – *no interpretation*
- 20.18 DADDY HIT ME REAL HARD – *had yelled at her*
- V23.00 'CAUSE IT MIGHT HIT ME – *answer to question*
- V23.00 BECAUSE MARIA HIT THE SQUARES – *about event on TV*
- V23.00 BECAUSE HER HIT ME – *event from day before*
- V23.00 HE'S GONNA HIT ME – *afraid he will*

TOUCH

Single-Word Use: to touch things (sometimes “Touch-it”) (18–19 months)

- V18.25 TOUCH-IT – *as touches feared object*

Use in Combination:

- 18.16 TOUCH LIGHT – *as doing so*
- 18.25 TOUCH NICE – *touching kitty softly*
- 20.10 TOUCH ME BOWL – *bowl rolled up against her*

PAT

Single-Word Use: to pat animals (18–19 months)

STICK

Use in Combination:

- 19.17 STICK A FOOT IN HERE – *in empty carton*
- 20.20 STICK THE FINGERS IN MY JELLY – *doing it*
- 22.03 STICK IT IN MY BUTT – *poking game*

SQUEEZE

Single-Word Use: as she squeezes toothpaste, oranges, etc. (19–20 months)

RUB

Use in Combination:

- 23.00 RUB IT IN MY HAIR – *doing it*

EAT

Single-Word Use: as she eats (18–19 months)

- A19.26 EAT-IT – *as she is eating rubber band*
- 19.02 CRACKER MOUTH . . . EAT-IT . . . MMM – *as she eats*

Use in Combination:

- 19.00 LEMON EAT-IT – *doing it*
 19.07 DOO-DOO FORK EAT-IT – *joking on the potty*
 19.12 EAT-IT POPSICLE – *sees it and wants to*
 19.16 EAT-IT BANANA – *she is*
 19.16 MORE GRASS... EAT-IT GRASS – *had been eating grass, then more*
 19.17 EAT-IT LEAVES – *they were on TV*
 19.21 EAT-IT ROLL – *doing it*
 19.22 EAT-IT HAMBURGER – *Mama's making them (she wants)*
 19.23 EAT-IT SOUP – *doing it*
 19.25 BACON EAT-IT – *doing it*
 19.29 EAT THE BALL – *doing it*
 20.00 EAT-IT LION – *animal cracker*
 20.03 EAT-IT ALL-UP ICE-CREAM SANDWICH – *doing it*
 20.19 EAT MINE SKIN UP – *doing it (banana skin)*
 20.19 EAT PIECE OF ICE ALL-UP – *doing it*
 20.24 EAT PIECE OF ICE ALL-UP – *doing it*
 20.24 EAT-IT ALL-UP – *gobble game*
 20.27 WEEZER EAT MY DINNER UP – *she's afraid he will*
 20.28 EAT THAT WAFFLE UP – *doing it*
 21.03 COOKIE MONSTER EAT ERNIE'S COOKIE – *he did on TV*
 21.06 EAT-IT ALL-UP APPLE – *doing it*
 21.10 LOOK AT PETE EATING A BONE – *to Mama*
 22.07 MOMMY GAVE THAT CEREAL FOR ME TO EAT – *she did*
 V23.00 CAN WE EAT IT? – *question to parents*
 24.28 I LOVE TO EAT PRETZELS – *doing it*

ATE

Use in Combination:

- 20.09 ATE MINE POTATO CHIP ON FLOOR – *the cat did*
 20.11 WEEZER ATE BOLOGNA LIKE ME – *cat doing like her*
 20.19 WEEZER ATE IT ALL UP – *he ate her potato chip off floor*
 20.19 CINNAMON ATE MY POTATO CHIP ALL UP – *she did*
 20.21 WEEZER ATE THE ROACH – *he did*

DRINK

Single-Word Use: comment on own or other's activity (especially bottle at first) (sometimes "drinking") (18–19 months)

Use in Combination:

- 19.09 BOTTLE DRINKING – *doing it*
 19.11 DRINKING THE BOTTLE – *doing it*
 19.28 WEEZER DRINKING THE EGGS – *cat drinking raw egg*
 20.04 LOOK AT A GIRL DRINKING A KOOL AID – *(on TV) she is drinking*
 20.19 DRINK MINE TEA UP – *Mama is*
 20.24 DRINK MY TEA UP – *doing it*

- 21.06 PICK THAT COFFEE UP DRINK – *wants to*
21.23 WEEZER DRINKING WATER MOMMY'S POTTY – *the cat is drinking from the toilet*
21.27 LIKE ME, DRINKING MY BOTTLE – *baby and her drinking*
V23.00 DRINK IT DOWN – *as she does so*
V23.00 I'LL DRINK ALL OF THAT – *before she does so*

SWALLOW

Single-Word Use: none

Use in Combination:

- V23.00 CAN'T SWALLOW IT ANYMORE – *telling us*
V23.00 I WON'T SWALLOW IT ANYMORE – *telling us*
V23.00 I'M NOT GOING TO SWALLOW IT ANYMORE – *telling us*

BITE

Single-Word Use: comment on own or other's activity (17–18 months)

Use in Combination:

- 17.19 COOKIE BITE – *trying to bite a cookie*
18.07 BITE APPLE – *playing, trying to bite apple*
18.07 BITE FINGER – *a cat bit Dada's finger (play), Travis sticks her finger out to the cat*
18.18 BITE STUCK – *Mama is trying to bite tag off dress*
18.22 BITE ALICE – *biting picture of Alice*
19.02 BITE THIS PIGTAILS – *(barrette) doing it*
19.02 BITE THIS CRACKER... BITE CRACKER – *doing it*
19.03 BITE STICK – *doing it*
19.03 BITE THE CRACKER – *as biting*
19.08 BITE THIS BALL – *on end of pen*
19.12 BITE STICK – *popsicle stick in hand*
19.24 BITE THE BANANA POPSICLE – *she's doing it*
20.01 BITE THIS ROLL – *doing it*

CHEW

Single-Word Use: as doing it (sometimes "chewing") (19–20 months)

Use in Combination:

- V23.00 CHEW IT – *as she chews*
V23.00 CHEW ON... ROCK – *laughing at joke*

LICK

Single-Word Use: none

Use in Combination:

- 19.22 CINNAMON LICK-IT HANDS – *when dog does*
19.22 LICK-IT HANDS – *offering them to dog*
19.22 TRAVIS LICK-IT – *popsicle (she is)*
19.22 WEEZER LICK-IT ARMS – *he's doing it (to her)*

- 20.17 PETE LICK-UP MINE BACON – *she dropped it, dog did*
 20.22 PETE LICK MY MILK UP – *he licks up her spill*
 21.00 CINNAMON LICK THAT MINE HANDS – *the dog is*
 21.15 WEEZER LICKING MOMMY'S SHOWER – *he is (water on floor of it)*
 V23.00 LICK IT OFF – *doing it*
 A23.00 LICKING ON A ICE CREAM CONE – *about picture in book*

BLOW

Single-Word Use: none

Use in Combination:

- 18.25 BLOW BALLOON – *trying to blow it up*
 19.23 BLOW ON THIS HERE – *wants Mama to blow on new toy*

PLAY

Single-Word Use: going outside to play (16–17 months)

- V16.25 PLAY – *answering question about what she's doing*
 18.04 PLAY, MARIA – *Mama says "ask Maria if she wants to come over and play." Travis yells out window*

Use in Combination:

- 19.11 WEEZER DID-IT . . . PLAY THIS SILK – *just happened, telling Mama*
 19.17 PLAY THIS CRAYON – *to pictures in book*
 19.17 PLAY THIS DRUM – *to pictures in book*
 19.18 PLAY SILK – *Weezer is playing with/on silk (blanket)*
 19.26 PLAY ON MONKEY BARS – *wants to*
 20.01 PLAY TOE – *Weezer is playing with her toe*
 20.01 PLAY WITH ME – *wants Mama to*
 20.04 BUNNY RABBIT PLAYING MUSIC – *on TV*
 20.16 PLAY BASKETBALL NOW – *she is going to*
 20.24 PLAY ON FLOOR . . . PLAY WITH BLOCKS – *wants what she says*
 20.24 PLAY WITH ME – *she wants someone to play with her*
 21.06 WEEZER PLAYING MY BABY – *the cat is playing with the baby-doll*
 V23.00 CAN I PLAY WITH THAT TOO – *request*
 V23.00 PLAY AT THE PLAYGROUND – *request*
 A23.00 YOU ALREADY PLAYED THAT RECORD – *comment*
 24.28 IT'S FUN TO PLAY WITH PUZZLES – *doing it*

KISS

Single-Word Use: to ask to kiss people (19 to 20 months)

Use in Combination:

- 19.30 KISS GROVER – *telling Mama to kiss the puppet*

HUG

Use in Combination:

- 20.16 HUG FRED REAL GOOD – *as Mama hugging her doll*

KILL

Use in Combination:

- 21.10 A MAN KILL A ROACHES – *the exterminator*

STEP-IN

Single-Word Use: none

Use in Combination:

- 18.22 STEP-IN WATER – *doing it*
18.26 STEP-IN WEEZER – *she did*
18.27 STEP-IN CLOTHES – *she is*
19.01 STEP-IN THIS PEN – *she is*
19.04 STEP-IN THAT MOO – *(tag) as she does it*
19.04 STEP-IN THIS – *stepped on something*
19.05 STEP-IN TOES – *(heard, but didn't see, something with kitty)*
19.07 STEP-IN DOO-DOO – *while stepping in it*
19.07 STEP-IN THIS DOO-DOO – *while stepping in it*
19.08 STEP-IN WATER – *she is*
19.19 STEP-IN THIS CREAM – *stepped in ice cream*
19.19 STEP-IN THIS MUSHROOM – *she did*
19.20 STEP-IN CRACKERS – *she did*
19.20 STEP-IN THIS PIZZA – *she did*
19.21 STEP-IN THIS TYSON PAPER – *she did*
19.22 STEP-IN PETE – *she did*
19.22 STEP-IN THIS WATER – *she is*
19.23 STEP-IN THIS WEEZER DOG – *stepped in Weezer's dish*
19.27 STEP-IN YOGA – *steps on picture*
19.28 STEP-IN CRACKER – *she did*
20.02 STEP-IN THIS MASH POTATO – *she did*
20.06 STEP-IN RIGHT HERE – *pointing for me where she had stepped*
20.13 STEP COOK DINNER – *stepped on top of pot*

PICK

Single-Word Use: picking flowers, leaves, etc. (18–19 months)

Use in Combination:

- 19.19 PICK THE FLOWERS – *wants to*
19.20 PICK ONES FLOWERS – *wants to*
20.03 PICK LINDA LEAVES – *doing it at Linda's house*
20.20 GRAPES PICK ONE – *wants to*
21.06 PICK THAT COFFEE UP DRINK – *wants to*
V23.00 CAN I PICK IT UP BY MY HANDS – *request*
V23.00 PICK THAT ALL UP – *doing it*

WIPE

Single-Word Use: at the potty (18–19 months)

Use in Combination:

- 20.22 WIPE THIS BABY-DOLL OFF – *wants me to*

- 20.22 WIPE THIS SHIRT OFF – *wants me to (doll)*
 21.00 WIPE ME OFF SILK – *wants to be wiped off with the silk*
 22.03 NO MOMMY WIPE MY BUTT OFF MYSELF – *wants to*
 22.27 WIPE THIS OFF THERE – *wiping shoes (mud) on board*
 22.27 WIPE IT OFF A SWING – *wiping mud on swing*
 22.27 WIPE IT OFF ON SWING – *wiping mud on swing*
 V23.00 YOU GONNA WIPE THAT OFF – *question*

BURN

Single-Word Use: in match game (17–18 months)

Use in Combination:

- 19.19 BURN THIS FIRE – *wants to put stick in fire*

PUSH

Single-Word Use: pushing people into pool (17–18 months)

Use in Combination:

- 19.16 PUSH DOWN, DADDY – *trying to shut door, wants help*
 19.27 PUSH ME – *on swing*
 19.27 STOP PUSH ME – *on swing*
 V19.27 BEAR... PUSH ME – *she is pushing bear*
 19.30 PUSH ME LEG – *I pushed her on leg (swing)*
 20.03 PUSH DOWN HORSE NOW – *doing it (push down a ramp)*
 20.03 PUSH HORSE DOWN – *pushing horse down a ramp*
 20.06 PUSH DOWN TABLE – *pushing down on edge of table*
 20.27 DANA PUSHED ME REAL HIGH IN A BAGSWING – *recounting event from days before*
 21.01 MOMMY PUSH THAT BUTTON – *Mama did*

PULL

Single-Word Use:

- V18.26 PULL – *she is*

Use in Combination:

- 20.15 PULL THE WAGON REAL HARD – *someone on TV*

LIFT

Use in Combination:

- V23.00 LIFT IT – *as she does*

POUR

Use in Combination:

- V23.00 I WANT TO POUR THIS IN THE WATER – *she wants to*

5.2. Activities not involving objects

SIT-DOWN

Single-Word Use: request or comment on own or others' activity (19 months)

- V19.26 SIT-DOWN – *as she does so*

Use in Combination:

- 18.29 SIT-DOWN CHAIR – *wants to*
- 19.00 SIT-DOWN CHAIR – *getting in her chair*
- 19.00 SIT-DOWN COUCH – *wants to sit on couch, not in her chair*
- 19.00 SIT-DOWN PILLOW – *wants to sit on pillow, not in her chair*
- 19.01 SIT-DOWN CHAIR, WEEZER – *telling cat to do so*
- 19.01 SIT-DOWN SILK – *doing it*
- 19.02 SIT-DOWN ONE PILLOW – *wants to, Maria on it*
- 19.02 SIT-DOWN RUG – *pointing and wanting me to*
- 19.03 SIT-DOWN CHAIR – *wants to, then does*
- 19.03 SIT-DOWN COUCH – *wants to*
- 19.04 SIT-DOWN BABY-DOLL – *she sat on it*
- 19.04 SIT-DOWN DADDY – *sitting on my head*
- 19.12 SIT-DOWN WEEZER PILLOW – *wants to and does*
- 19.17 SIT-DOWN GRASS – *command to Dada*
- 19.18 SIT-DOWN THIS BED – *as she's doing it*
- 19.20 SIT ON THE BED – *while doing it*
- 19.27 SIT-DOWN FLOOR – *doing it*
- 19.29 SIT-DOWN DOG – *she is sitting on rug (dog)*
- 20.27 COME-ON SIT ME – *wants Mama to sit with her*
- 21.20 TRAVIS SIT-DOWN CHAIR – *she wants to*

LAY-DOWN

Single-Word Use: *as she is lying down (19 months)*

Use in Combination:

- 20.02 LAY-DOWN CHAIR – *doing it on chair*
- 21.05 LAY-DOWN COVER UP – *to her dolls*

CLIMB

Use in Combination:

- 20.04 LOOK WEEZER CLIMBING A TREE – *the cat is*
- V23.00 CLIMB UP HERE CHAIR, OKAY – *as she does so*

STAND

Use in Combination:

- 23.00 STANDING TO THE HEATER – *she is standing by it*
- V23.00 STAND ON THE BOOK – *as she does so*
- 24.28 LET ME STAND RIGHT HERE BY YOU – *asking*

JUMP

Single-Word Use: *request or comment on her own activity or order to others (in jumping game) (17–18 months)*

- A18.25 JUMP – *request to jump (four times)*

Use in Combination:

- 18.24 MORE JUMP – *asking to jump again*

20.19 PETE JUMP REAL GOOD – *he jumped off bed*

20.27 MOMMY JUMP ME BAGSWING – *wants Mama to jump on her on swing*

WALKING

Use in Combination:

19.23 WALKING HERE FUNNY – *walking on couch*

20.24 FRED WALKING PILLOW – *doll “walking” on pillow*

SWIM

Use in Combination:

18.24 SWIM STEPS – *wants to swim to the steps*

19.08 CLOWN SWIMMING – *taking him to pool*

19.08 MORE SWIMMING – *wants to go back to pool*

20.06 HIPPO SWIMMING – *picture in book*

RUN

Use in Combination:

20.01 RUN IN THE STREET – *remembering incident*

20.29 RUN REAL FAST STEPS – *running to steps*

CRYING

Single-Word Use: seeing or hearing baby cry (“Crying”) (16–17 months)

Use in Combination:

17.25 BABY CRYING – *heard baby crying*

17.26 BOOKIE CRYING – *Bookie is crying*

18.27 WALLY CRYING – *picture of Wally crying*

19.04 CRYING MOMMY – *wants to see picture of Mommy crying*

23.26 CRY ABOUT YOU – *telling us about school*

SINGING

Single-Word Use: comment on self or others singing

Use in Combination:

19.04 GROVER SINGING – *on TV*

19.04 MARIA SINGING – *on TV*

20.06 DADDY SINGING CHICKEN – *I am*

20.11 KIDS SINGING “RAININ’ POURIN’ OLD MAN IS SNORIN’ BUMPED HIS HEAD” . . . LIKE THAT – *telling us about kids singing on record*

SLEEPING

Single-Word Use : seeing or being told someone sleeping (19–20 months)

19.25 SLEEPING – *lying down, eyes closed*

V19.26 SLEEPING – *about baby-doll (two times)*

Use in Combination:

- 19.18 CAROL SLEEPING – *she is*
- 19.18 CINNAMON SLEEPING – *she is*
- A19.27 MARIA SLEEPING RIGHT HERE . . . GRASS – *laughing at joke*
- 19.28 GROVER SLEEPING – *puppet in her bed*
- 19.30 GROVER SLEEPING – *puppet in her bed*

SCREAMING

Single-Word Use: when someone heard screaming (19–20 months)

Use in Combination:

- 19.21 LADY SCREAMING – *on TV*
- 19.23 MARIA SCREAMING – *she is*

PEE-PEE (verb only)

Single-Word Use: comment on her own or others (especially dogs) activity (17 months)

Use in Combination:

- 17.15 PEE-PEE POTTY – *needs to pee*
- 17.16 PEE-PEE POTTY – *picture of girl (looks like potty)*
- 18.04 PEE-PEE PANTS – *see wet on pants*
- 19.03 PEE-PEE GA-GA – *telling me (Dada) she wet her nightgown*
- 19.09 MORE PEE-PEE – *sits on potty again, wants to*
- 19.15 PEE-PEE GRASS – *she peed on grass*
- 19.25 PEE-PEE IN THIS ROOM – *she had peed there earlier*
- V19.26 PEE-PEE . . . MORE PEE-PEE – *needs to*
- 19.30 DADDY PEE-PEE TOO – *telling me to (she is)*
- 20.01 BABY PEE-PEE – *picture in book*

WAVE

Single-Word Use: waving to people (19–20 months)

Use in Combination:

- 19.04 DADDY WAVE – *he is, in picture*

CLAP

Single-Word Use: to name activity of clapping (19–20 months)

Use in Combination:

- 19.14 LADIES CLAPPING – *they are on TV*

SWING (verb only)

Single-Word Use: Comment on things swinging (from clothesline, etc.) (19 months)

Use in Combination:

- 19.10 CLOTHES SWINGING – *looking at clothes on line*
- 19.12 MOMMY SWINGING – *Mama is hugging and swinging*

- 19.21 SWING THIS – *swinging on rope*
 19.22 SWING THIS MONKEY BARS – *she is doing it*
 20.05 SWINGING THE NEW PAJAMAS – *she is*

SEE

Single-Word Use: none

Use in Combination:

- A18.25 SEE THIS – *wanting to see inside tape recorder (two times)*
 18.27 SEE MARIA – *telling me (Dada) to (she is)*
 18.29 SEE DADDY – *seeing him out window*
 18.29 SEE DANNY – *out window*
 18.29 SEE THIS – *wants Daddy to look*
 18.30 SEE DADDY'S CAR – *out window*
 19.02 SEE DADDY – *through kaleidoscope*
 19.02 SEE THE PAPER – *stationary*
 19.02 SEE THE PICTURE TIGER – *a picture of a tiger*
 19.02 SEE THE RABBIT – *doll*
 19.02 SEE TYSON – *looking out window*
 19.03 SEE BABY – *wants to be where she can see it*
 19.03 SEE CAMERA – *wants to be where she can see it*
 19.03 SEE PICTURE – *wants to be where she can see it*
 19.04 SEE THE PIZZA – *picking up picture of pizza*
 19.08 SEE MARIA – *Mama had closed the window, Maria outside*
 19.10 SEE THE SHEEP – *wants to be held up to see it*
 19.20 SEE LINDA – *wants to*
 19.20 SEE PAUL – *wants to*
 19.21 SEE PETE – *she hears him, wants to see him*
 19.22 SEE MOMMY – *drives up in car*
 19.23 SEE GIRAFFE – *leaving, wants to go to store with giraffe*
 19.25 SEE ADAM – *wants to (hears him)*
 19.25 SEE BODY – *wants to (everybody-hears)*
 19.26 SEE WEEZER – *wants access to window*
 19.28 SEE ED – *wants to*
 19.29 SEE MOO – *wants to be where she can see cow*
 19.29 SEE STU – *wants to be where she can see Stu*
 20.01 SEE PEABODY BOOK – *looking for it*
 20.09 SEE PAUL MOUNTAINS – *she has been told she will*
 20.12 UNDER SEE THE FLOWERS – *going under leg to get to flowers*
 21.08 SEE EGG IN THE REFRIGERATOR – *to Mama*
 21.16 SEE THAT RIGHT OVER THERE – *pointing*
 21.17 SEE MY BOTTLE IN MY SILK – *bottle wrapped in blanket*
 21.19 SEE CRAYONS IN MY MOUTH – *to Mama*
 21.19 SEE THE BIRD OVER THERE – *to Mama*
 22.03 COME BACK THERE SEE FLINTSTONES – *in store*
 22.03 I CAN'T SEE... TURN LIGHT ON – *telling me (Mama)*

- 22.04 I SEE YOU UP THERE – *I'm in the tree*
22.04 I SEE YOU UP THERE AGAIN – *I'm in the tree*
23.00 SEE THAT BEAR – *to Daddy*

LOOK

Single-Word Use: request for others to look at her or something else (19–20 months)

V19.26 LOOK . . . LOOK – *asking a parent to*

Use in Combination:

- 19.10 LOOK THE CINNAMON – *wants to (moves so can)*
19.26 DANNY, LOOK SMOKE MOUTH – *telling Danny about man (scared)*
19.28 LOOK AT BLOCKS – *Maria is stacking blocks*
19.28 LOOK AT MARIA – *Maria is stacking blocks*
19.28 MARIA LOOK AT THIS – *necklace*
19.30 LOOK AT CINNAMON – *telling Mama to*
19.30 LOOK AT FIRE – *telling Mama to*
19.30 MOMMY, LOOK AT MASHED POTATO – *drawer with them in it*
20.04 LOOK AT A GIRL DRINKING A KOOL-AID – *(on TV) she is drinking*
20.04 LOOK WEEZER CLIMBING A TREE – *cat in tree*
20.06 DADDY, LOOK OVER HERE – *commanding me to (a mop)*
20.06 LOOK ME UPSIDE-DOWN – *she is, and is telling me (Dada)*
20.12 LOOK AROUND DADDY . . . LIKE MOMMY – *for her bottle (I had asked "where is it")*
20.19 LOOK MARIA SWEATER ON ME – *she just put it on*
21.07 LOOK PRETTY AUNT TONI'S DRESS – *wants me to look at dress given to her by Toni*
21.10 LOOK AT PETE EATING A BONE – *to Mama*
22.07 LOOK AT ME IN THERE – *she's in pipe (here)*
A23.00 LOOK THOSE BIRDIES – *telling Daddy to look (out window)*
A23.00 LOOK THAT MAN – *telling Daddy to*

WATCH

Parent Use: telling each other to "Watch her" or T to "Watch TV"

Single-Word Use: none

Use in Combination:

- 18.30 WATCH TV – *wants to*
19.11 WATCH CAPTAIN BOOK – *TV show (wants to)*
19.21 WATCH MONKEY – *wants to (on TV)*
19.25 WATCH SESAME STREET – *wants to*
A19.26 WATCH TV – *wants to (two times)*
A19.27 WATCH SQUARES – *on TV*
19.28 DADDY WATCH GET-TO-STREET – *Sesame Street, wants Dada to*
19.30 WATCH ME DOORS OPEN – *getting in cabinet (meant to say close)*
19.30 WATCH TV INSIDE – *wants to*
20.01 WATCH SQUARES ON THERE – *wants a specific TV program*

- 20.01 WATCH THIS PROGRAM – *wants to, doesn't want TV channel changed*
 20.01 WATCH TV NOW – *running to living room*
 20.06 WATCH TV PILLOW – *wants to lie on pillow and watch TV, doesn't want to sit in her chair*
 21.20 WATCH LAND LOST WITH ME – *wants me (Mama) to*
 A23.00 WATCH THE TV – *she wants to*

TASTE

Single-Word Use: none

Use in Combination:

- 19.00 TASTE GOOD – *eating a flower*
 V19.26 TASTE GOOD – *eating chalk*

SMELL

Single-Word Use: none

Use in Combination:

- 19.29 EGGS SMELL-IT – *smelling egg on spoon*

LISTEN

- 21.18 LISTEN TO MY RECORD – *asking to*

FEEL

- 20.07 PETE FEEL BETTER NOW – *after dog ate*
 A23.00 FEEL THAT – *about object Daddy holding*
 A23.00 FEEL THAT DADDY – *same situation*

HURT

Single-Word Use: report on her getting hurt (falling down, etc.) (18 months)

- V18.25 HURT – *saying stapler will hurt her (three times)*
 V18.25 HURT – *after she hit her hand (two times)*

Use in Combination:

- 18.30 HURT SILK – *thinks it's hurting her*
 19.07 HURT EYES... THIS... OUT EYES – *she had gotten pepper in her eyes*
 19.19 HURT FINGERS – *she scratched them*
 19.21 EYES HURT – *smoke got in her eyes*
 19.23 PETE HURT THE FINGERS IN THERE – *holding her fingers (no incident we are aware of)*
 A19.26 HURT SELF – *worried she will*
 19.27 DANNY HURT ME – *he hit her with ball*
 19.30 DADDY HURT – *I burned my hand (yelled, etc.)*
 20.01 HURT BUTT – *she did*
 20.06 WEEZER HURT THE LEG – *he hurt her leg*
 20.07 PETE HURT A CAR – *he was hit by car day before*
 20.07 PETE HURT A CAR STREET – *he was hit by a car in the street*

- 20.14 SOMETHING ELSE HURT RIGHT HERE – *Mama had been looking at a cut, she's now showing her another one*
20.17 X HURT ME – *tool (shaped like X) hurt her*
21.00 THAT BABY-LOTION HURTS ME – *it does*
21.05 THAT HURT MY FINGER – *a toy did*
21.11 HURT MYSELF – *she did*
22.04 HURT BY CAR – *the dog was*
22.07 HURT BY STREET – *she fell on it*
22.07 HURT BY SWING – *she was (it hit her)*
V23.00 IT HURT ME – *something did*
V23.00 I DID GET HURT – *report on previous event*
A23.00 IT HURTS

SCARED

Single-Word Use: when she is afraid (18 months)

- V18.25 SCARED – *to stapler (seven times)*

Use in Combination:

- 19.26 SCARED MAN . . . SCARED MAN ON TV – *days before she was scared of a man on TV*
19.29 SCARED MASK – *she's afraid*
20.08 SCARED MONSTER ON TV – *telling Mama she is*
20.15 SCARED OF THE FUNNY THESE – *pictures in book, Mama asks "why"*
20.19 SCARED THAT OTHER CAR – *driving in car*
20.21 SCARED OF FUNNY OTHER MAN – *man on TV (robot)*
20.24 SCARED OF THAT OTHER CAR – *car goes past*
21.10 BECAUSE . . . MARIA SCARES ME UP HIGH – *Maria is up in window on second floor*

SORRY

Use in Combination:

- 18.13 SORRY MILK – *patting glass affectionately*
18.26 SORRY WEEZER – *she had hurt him*
18.28 SORRY BABY-DOLL – *brush stuck in her hair*
18.28 SORRY CINNAMON – *heard dog yelp*

TRY

Use in Combination:

- 19.13 TRY THIS – *putting on Mommy's shoes*
20.03 TRY THIS LEAVES – *reaching for them, too high*

MEAN-TO

Single-Word Use: saying she didn't mean to do something after she's done it (22 months)

LIKE (internal state only – not similarity)

Use in Combination:

- A19.26 LIKE-IT BREAD – *reporting*

- 20.07 LIKE MUSIC – *telling us*
 20.07 LIKE TV – *telling us*
 20.14 WEEZER LIKE MY BREAKFAST – *cat eating her food*
 21.02 I LIKE PP POPS – *telling us as she eats cereal*
 V23.00 MOMMY LIKE IT – *holding up toy*
 A23.00 I LIKE IT
 A23.00 THIS ONE I LIKE BETTER

LOVE

Use in Combination:

- 20.03 COOKIE MONSTER LOVE COOKIES – *on TV*
 20.08 TRAVIS LOVE A DA PEANUT BUTTER SANDWICH – *telling
 Mama*

HUNGRY

Single-Word Use: to report on her inner state

Use in Combination:

- 20.23 WEEZER HUNGRY NOW – *cat is snooping around kitchen*
 20.29 ME HUNGRY – *she is*

WANT

Single-Word Use: “Want-it” as a request for objects

- A19.26 WANT-IT – *meaning “I don’t want it” (two times)*

Use in Combination:

- 22.05 I DON’T WANT IT – *go to bed*
 V23.00 WANNA BITE? – *offering*
 V23.00 YOU WANT SOME TOO? – *offering*
 V23.00 I WANT THE CUP – *telling Daddy*
 V23.00 I WANT TO TAKE ONE AT A TIME – *cheetos (chips)*
 V23.00 WANT MORE MOMMY – *requesting*
 V23.00 I WANT TO POUR THIS IN THE WATER
 A23.00 I WANT MY BOTTLE – *not a cup*
 A23.00 WANT SOME THAT TEA? – *offering*
 23.28 THAT’S THE KIND OF JELLY I WANT
 24.0+ I WANT THE SHEETS WITH THE PINK SILK ON TOP OF
 THEM – *answer to question about how she wants her bed*
 24.0+ I WANT TO DRAW WITH STU’S PEN – *Daddy has it, she wants it*
 24.0+ I WANT TO GET IN YOUR LAP – *she does*
 24.0+ I WANT TO HOLD YOUR TEA – *she does*
 24.0+ I WANT THAT TOY THAT I FOUND – *in bath, instructing Daddy
 to get her toy she had found in bushes earlier in the day*

NEED

Single-Word Use: “Need-it” as a request for objects

Use in Combination:

- 20.21 NEED MORE JELLO – *wants more*
- 20.21 NEED THIS UP-HERE – *wants book off shelf*

TOLD

Use in Combination:

- V19.26 MARIA TOLD ME HAVE ONE TOO – *from before*
- 19.29 MARIA TOLD ME DRAW – *she had earlier*
- 19.29 DADDY TOLD ME B – *pointing to letter B*
- 20.02 STU TOLD ME HIPPOPOTAMUS – *on seeing picture (Stu had corrected her “hippo” days before)*
- 20.05 DADDY TOLD ME STAR LEG – *star on Daddy’s leg*
- 20.08 MARIA TOLD ME QUACK-QUACK – *she did earlier in day*
- V23.00 I ALREADY TOLD YOU – *she had*
- V23.00 I TELL YOU – ?

CALLED

Use in Combination:

- 19.26 DANA CALLED ME LAUREN – *Dana told T to call Lauren*

TALK

Use in Combination:

- V19.26 TALKING CATHERINE – *playing on phone*
- 22.07 DANNY’S TALKING A CHRIS – *he is*
- V23.00 TALKING ON THE TELEPHONE – *reporting that she is*
- 25.00 I GO OUTSIDE TALK TO MARIA – *asking if she can*

SAID

- A23.00 MARIA SAID THAT – *identifying the speaker on a record (two times)*

REMEMBER

Use in Combination:

- 19.30 REMEMBER MONSTERS UP IN SKY – *recalling TV show*
- V23.00 REMEMBER, DADDY? – *asking*
- V23.00 I DON’T REMEMBER – *in answer to a question*
- V23.00 REMEMBER THAT MACHINE – *cueing parents*

CHAPTER 6. OTHER GRAMMATICAL STRUCTURES

6.1. Sentences without verbs

(Note: Many of these structures may occur within sentences containing verbs; these are not listed here but with the particular verbs.)

6.1.1. Object-object constructions

- 17.13 MOMMY BOOK – *leaving Dada, wants Mommy to read*

- 17.13 PICTURE LULU – *hugging picture of Lulu*
 17.15 BABY COKE – *(whining) wants some*
 17.15 MOMMY CHAIR – *Mama is painting chair*
 17.16 BABY COFFEE – *wanting some coffee*
 17.16 BABY COOKIES – *trying to open box of cookies*
 17.18 BALL MOMMY – *throwing ball at Mommy*
 17.22 MOMMY DIRT – *Mommy is shoveling dirt*
 17.25 EGGS MOUTH – *wants eggs in her mouth*
 17.27 BABY BIRDS – *Travis asks “whatzat,” Dada answers “little birds,” T replies*
 17.27 CANDIES MOUTH – *wants candy at store*
 17.27 PETER PAN BOOK – *wants her Peter Pan book*
 18.00 APPLE PILLOW – *a piece of apple is stuck in the pillow*
 18.02 HANDS WATER – *washing hands*
 18.02 PICTURE BOOK – *asking Dada to show her pictures (coming up with book in hand)*
 18.03 BOTTLE RABBIT – *balloon with picture of a rabbit (she had been sucking it)*
 18.07 TURTLE PILLOW – *pillow in shape and color of turtle*
 18.08 BABY DEER – *on TV, an advertisement for baby animals (TV had said “baby” but not deer)*
 18.08 BABY OWL – *on TV, an advertisement for baby animals*
 18.08 BABY SEAT – *getting in her car seat*
 18.09 SILK BLANKET – *old and new names for blanket*
 18.10 BERRY BALL – *she had just called a berry a ball*
 18.11 BALL GARAGE – *putting ball in garage*
 18.11 ELEPHANT BABY – *some TV commercial*
 18.12 FLOWER TRAVIS – *Mama threw a flower on Travis*
 18.13 MAN-CYCLE – *man on motorcycle*
 18.15 POKER TREE – *watching Poker climb the tree*
 18.16 CYCLE-MAN – *man on motorcycle*
 18.17 ICE-CREAM MILK – *to a bowl of melted ice cream*
 18.18 TURTLE BOWL – *putting turtle in bowl*
 18.19 TOP MEDICINE THAT – *trying to put top on jar of medicine*
 18.23 GRAPE JUICE BOTTLE – *as it is being poured*
 18.25 DADDY MAN – *man on TV*
 18.27 BABY SEAT – *as crawling on seat in car*
 18.27 WEEZER PILLOW – *he sleeps on it*
 18.29 COFFEE MILK – *she poured coffee in a milk glass*
 18.29 OWL EYES – *picture of owl head*
 18.30 BERRIES MOUTH – *emphasizing to us to get her some*
 19.00 KETCHUP MOUTH – *eating it*
 19.00 WEEZER BUSHES – *Weezer is in the bushes*
 19.01 TOP MILK – *taking top off milk*
 19.01 WEEZER CAT MILK – *in his bowl*
 19.03 CREAM GARBAGE – *ice-cream package in garbage*
 19.03 CYCLE-MAN HAT – *motorcycle helmet*

- 19.03 GIRL CREAM – *a girl has an ice-cream cone*
- 19.03 PICTURE BABY – *looking at it*
- 19.04 CHRIS CARS – *Chris is driving by in car*
- 19.04 DADDY SOAP – *man taking bath (picture)*
- 19.04 DAVE HORSE – *Dave is petting the horse*
- 19.04 SUGAR COFFEE – *Mama is putting sugar in coffee*
- 19.05 WEEZER GRASS – *Weezer playing with grass*
- 19.06 LASSIE FOOD – *picture of Lassie on the dog food*
- 19.07 PEPPER EYES... SALT EYES – *few minutes after she had gotten pepper in her eyes*
- 19.09 BABY SHEEP – *baby goats on Captain Kangaroo*
- 19.13 PRESENT BABY-DOLL – *a doll was a present day before*
- 19.15 PILLS MOUTH – *copying my action of taking a pill*
- 19.17 JELLO FACE – *she got some on her face*
- 19.17 PILLOW RUG – *looking at pillow on rug*
- 19.17 POPSICLE BOTTLE – *joking to me (look alike)*
- 19.19 BUG EYE – *a bug is in her eye*
- 19.21 PETE CINNAMON WATER – *dog bowls of water*
- 19.23 ELEPHANT CHAIR – *chair is shaped like an elephant*
- 19.27 FRENCH FRIES GROVER – *putting fries in Grover's mouth*
- 19.28 POTATO MOUTH – *it is in it*
- 19.29 MICKEY MOUSE SHIRT – *saw boy who usually wears one*
- 19.30 DADDY WOOD – *I brought it in house*
- 20.03 BICYCLE BALL – *puts ball on bicycle seat*
- 20.05 STAR LEG – *there's a star on my (Dada's) pants leg*
- 20.05 TRIANGLE LEG – *there's a star on my pants leg*
- 20.12 CHICKEN MONEY – *play money with chicken on it*
- 20.14 BAND-AID CINNAMON – *Cinnamon wrapped in ace bandage*
- 20.16 ORANGE ME – *wants to hold and eat orange*
- 20.19 SOUP COFFEE – *soup in a coffee cup*

6.1.2. Possessives

POSSESSOR-POSSESSED

- 17.01 MOMMY MILK – *pointing to Mommy's glass*
- 17.03 LAURNALD HOUSE – *looking at Lauren's house*
- 17.07 PETE BALL – *Pete is chasing and catching ball*
- 17.09 MAMA BEDUS – *pointing*
- 17.11 MOMMY CLOTHES – *pointing to clothes on line*
- 17.11 MOMMY SHAMPOO – *while handling it*
- 17.11 MOMMY SUIT – *handling Mama's bathing suit*
- 17.12 MOMMY SALAD – *pointing*
- 17.13 MOMMY APPLE – *picking up core of Mama's apple*
- 17.13 MOMMY CLOTHES – *picking up shirt*
- 17.14 MOMMY'S PILLOW – *patting pillow (Mama on it)*
- 17.15 MOMMY'S SHIRT – *pointing to shirt*
- 17.16 DADDY CHAIR – *pulling it*

- 17.16 MOMMY CIGOS – *pointing*
 17.16 MOMMY'S BIDO – *pointing*
 17.17 BABY TOYS – *a box of her toys*
 17.17 MOMMY CHAIR – *pointing to empty chair*
 17.18 MOMMY'S ROBE – *pointing*
 17.21 MOMMY PANTS – *to Mommy's pants on floor*
 17.22 MOMMY DIRT – *Mommy is shoveling dirt*
 17.22 MOMMY'S HOUSE – *block house Mommy had built*
 17.23 MOMMY MILK – *pointing to Mommy's glass of milk*
 17.24 DANNY'S HOUSE – *a block house Danny had built*
 17.24 MARIA'S HOUSE – *looking out window*
 17.25 ASHLEY'S BOTTLE – *watching Ashley drink*
 17.25 BABY'S BOTTLE – *watching Ashley drink*
 17.26 MOMMY'S LAP – *wants in Mommy's lap*
 17.27 MOMMY'S PILLOW – *right after "mine pillow," carrying same pillow*
 17.29 MARIA'S BALL – *pointing*
 18.01 DANO DADDY – *playing with Dano, her Daddy comes to get her*
 18.03 CARL'S CHAIR – *Carl had just been sitting in it*
 18.03 MARIA'S SCHOOL – *no obvious referent*
 18.04 DADDY'S NOSE – *pointing*
 18.04 MOMMY'S NOSE – *pointing*
 18.06 BABY BUTT – *picture in paper*
 18.09 DADDY'S BABY – *to mirror (no model)*
 18.09 DADDY'S BALL – *to Maria's ball*
 18.09 DADDY'S TRAVIS – *to mirror (no model)*
 18.09 DADDY'S TREE – *Dada not around at time of statement*
 18.10 DADDY PILLOW – *large living room pillow, not his*
 18.10 DADDY'S SALAD – *pointing to it*
 18.10 LINDA'S CAR . . . POKER'S CAR – *to Linda's car, Poker is her cat*
 18.11 TRAVIS BERET – *she and Mama had been talking about Mama's beret*
 – *she wants hers*
 18.11 TRAVIS ROBE – *wants to put on her robe*
 18.13 DADDY'S BREAD – *Dada holding bread, she points*
 18.16 TONI'S SHOES – *pointing to Toni's feet*
 18.20 MOMMY'S FORK – *picked it up at breakfast*
 18.20 MOMMY'S HAIRS – *pulling Mommy's ponytail*
 18.20 TRAVIS FORK – *picked it up at breakfast*
 18.25 MARIA'S BALLOON – *pointing (Maria is holding it)*
 18.27 MOMMY EGGS – *pointing to plate in front of Mama*
 18.27 WEEZER PILLOW – *he sleeps on it*
 18.29 HOOPER'S BIKE – *Hooper just arrived on it*
 18.30 WEEZER FOOD – *in his bowl*
 19.00 TRAVIS ROBE – *putting on her (little) robe*
 19.03 FLUFIN'S BALL – *carrying Flufin's big ball*
 19.03 LINDA'S SHIRT – *to Maria's shirt (on her)*
 19.03 STU'S PILLOW – *pillow at Stu's house*
 19.19 MARK RING – *his ring, she's holding it*

- 19.21 PETE CINNAMON WATER – *dog bowls of water*
- 19.21 TRAVIS FEATHER – *she found it*
- 19.26 MARIA'S FRIENDS – *the day before*
- 19.27 GROVER'S MOUTH – *putting fries in his mouth*
- 19.28 MARIA'S UMBRELLA – *holding it (distinctive cartoons)*
- 19.29 STU GLASSES – *holding them (they're mine)*

MY (without other verbs)

- 19.08 MY BOOK – *holding to self*
- 19.08 MY HOSE – *to Maria who is taking it away from her*
- 19.08 MY WATER – *to Maria who was taking it away from her*
- 19.25 MY PILLOW – *clutching it*
- A23.00 MY BOOK – *asserting (nine times)*
- A23.00 MY CHAIR – *asserting*

MINE

- 17.27 MINE PILLOW – *in succession, carrying same pillow*
- 19.19 THIS RING MINE – *holding it to her*
- V23.00 MINE – *asserting about chalk*

YOUR

(only occurs in sentences with verbs)

6.1.3. Locatives

(See section 4.4, on location of objects, and section 6.1.1, on object–object constructions)

6.1.4. Attributives

- 17.14 COFFEE HOT – *reaching for coffee*
- 17.14 HOT COFFEE – *looking at it*
- 17.16 FLOWERS PRETTY – *holding flowers*
- 17.20 PRETTY FLOWERS – *picked up, said “flowers, pretty flowers”*
- 17.21 HEAVY BLOCKS – *picking up blocks*
- 17.22 FUNNY MAN – *picture of man*
- 17.24 PRETTY RABBIT – *to picture*
- 17.26 TWO BOTTLES – *24 hours before, Mama had said “two cats” to two cats*
- 17.26 TWO CATS – *looking at two cats*
- 17.27 FUNNY BOOKS – *picking up a book*
- 17.27 TWO CATS FUNNY – *two cats playing on a chair*
- 17.27 TWO COOKIES – *two poker chips*
- 17.27 TWO LADIES – *picture of two ladies*
- 17.27 TWO MANS – *picture of two men*
- 17.27 TWO SILKS – *blanket (silk) on her, she's moving it, several tries*
- 17.28 CHAIN HEAVY – *lifting chain*
- 17.28 TWO CHIPS – *a pile of chips*
- 17.28 TWO CUPS – *in bag*
- 17.28 TWO DADDYS – *a bunch of Daddy pictures*

- 17.28 TWO LIGHTS – *traffic lights*
17.28 TWO MANS – *on TV*
17.28 TWO OWLS – *picture*
17.29 TWO APPLES – *receiving two pieces of apple*
17.29 TWO WATERS – *carrying two bowls of water*
18.00 TWO LADIES – *a bunch of ladies*
18.00 TWO MONKEYS – *pictures (two)*
18.01 TWO BALLS – *holding two*
18.01 TWO TOWELS – *two rolls of paper towels*
18.03 TWO BRICKS – *trying to lift two of them*
18.03 TWO CHIPS – *one in each hand*
18.04 FUNNY LADY – *clownlike lady*
18.04 TWO CARROTS – *in soup (many)*
18.04 TWO RABBITS – *a bunch of rabbits*
18.07 PRETTY THAT – *pulling scarf out of laundry*
18.08 PRETTY RING – *putting it on*
18.08 TWO CHAIRS – *trying to replace one chair with another*
18.10 HAND DIRTY – *her hand is dirty*
18.10 PRETTY PLANTS – *picking up plant*
18.10 TWO PIGTAILS – *holding her two pigtails*
18.11 BIG BALL – *had been learning big–little the night before*
18.11 LITTLE BALL – *had been learning big–little the night before*
18.12 FUNNY MAN – *clown*
18.13 FUNNY LADY – *hat*
18.14 PRETTY THAT – *touching a projector (doesn't know name)*
18.15 BIG BUTTONS – *a set of medium-sized buttons*
18.15 PRETTY ROCKS – *picking up rocks*
18.15 TWO CHESS – *two chess diagrams*
18.16 NICE BEAR – *patting teddy bear*
18.16 NICE POLE – *hugging pole*
18.19 NICE CHEESE – *patting cheese*
18.19 NICE MOMMY – *patting Mama's face*
18.20 PRETTY TEETH – *looking in Mama's mouth*
18.23 TWO GARBAGE – *two paper bags*
18.25 BIKE FAST – *wants Dada to push bike fast*
18.25 GOOD MOMMY – *Mama catches ball (had told her "good Travis")*
18.25 HEAVY POKER – *picking her up*
18.25 TOUCH NICE – *touching softly*
18.27 FUNNY PIG – *piggy bank (painted)*
18.27 PRETTY EARS – *grabbing cats ears*
18.27 TWO FORKS – *two forks*
18.28 GOOD APPLE – *eating it*
18.29 HEAVY THIS – *lifting chair*
18.29 LITTLE BALLOON – *picking up deflated balloon*
18.29 LITTLE BIKE – *a trike next to bike*
18.29 LITTLE TV – *monitor next to TV*
18.29 TWO TAPES – *two in her hand*

- 18.30 BIG SILK – *big blanket (hers are small)*
 18.30 BLUE SILK – *blue blanket*
 18.30 DIRTY HANDS – *they are, she's looking at them*
 18.30 HANDS DIRTY – *they are, she's looking at them*
 19.00 BIG ROBE – *picking up Mama's robe*
 19.00 FUNNY LITTLE ROCK – *picking it up*
 19.00 GOOD JUICE – *drinking it*
 19.00 GOOD LEMON – *eating it*
 19.00 LITTLE ROCK – *picking it up*
 19.00 TASTE GOOD – *eating flower*
 19.01 BLUE EGGS – *carton in store*
 19.01 HEAVY RUGS – *carrying them*
 19.02 FUNNY BALL – *no obvious referent (in car, we missed)*
 19.02 HEAVY BABY-DOLL – *picking it up*
 19.02 HEAVY PAMPERS – *carrying them*
 19.02 WET COKE – *after playing with Coke can in mud puddle*
 19.03 BLUE EAR – *blue earring*
 19.03 NICE PILLOW – *rubbing*
 19.03 PRETTY BOAT – *on her shirt*
 19.03 PRETTY LIGHT – *looking at*
 19.03 TWO CYCLE-MAN – *two motorcycles*
 19.04 BIG TREE... DADDY'S TREE... BIG DADDY'S TREE – *holding tree and looking up at it*
 19.04 GOOD BEER – *stole a sip from bottle*
 19.04 MESS JUICE – *telling Mama*
 19.04 NICE BUBBLES – *trying to touch them*
 19.08 FUNNY CAPTAIN BOOK – *Captain Kangaroo*
 19.10 BIG SPOON – *wants it (serving spoon with small ones)*
 19.10 THIS BUG – *bug had run under refrigerator*
 19.12 FUNNY MONKEY – *chimp dresses up*
 19.13 BALLOON BROKEN – *picking up piece of balloon*
 19.16 FUNNY BOSOM – *to mine (Mama's)*
 19.16 FUNNY KERMIT FROG – *funny picture of frog on car*
 19.16 HEAVY POKER – *lifting big cat*
 19.17 GOOD JELLO – *eating it*
 19.18 TWO MONEYS – *two pennies*
 19.19 TINY FLOWERS – *wants to pick tiny flowers*
 19.19 THIS APPLE RING – *holding it*
 19.19 THIS HOLE – *putting finger in it*
 19.20 BIG TRUCK – *semi passes us, big and noisy*
 19.20 TINY PEOPLE – *far away crowd*
 19.21 BIG BALL – *beach ball*
 19.21 BIG JELLO – *it is in a cup*
 19.21 DADDY HEAVY SHOES – *picking up Daddy's shoes*
 19.21 DIRTY RAISIN – *found on ground (dirty)*
 19.22 SOCK WET – *she wants to water it*
 19.22 WEEZER WET – *trying to water him*

- 19.22 THIS CANE – *carrying it*
 19.23 FUNNY CYCLE-MAN – *fancy motorcycle*
 19.23 GROVER PRETTY – *new toy*
 19.23 THIS FORK – *picking it up*
 19.24 FUNNY COOKIE-MONSTER – *on TV*
 19.24 GOOD BAGEL – *eating it*
 19.28 BIG LEG – *Mommy's, she is holding it*
 19.29 BIG DARK – *had been told "it's only a little dark"*
 19.29 FUNNY STU – *Stu working puppet*
 20.02 LITTLE BOYS – *on TV*
 20.05 THIS ONE OTHER FUNNY MAN – *other man on TV*
 20.10 TRIANGLE'S LITTLE – *she drew one*
 20.12 MARIA'S FUNNY MAN – *picture at Maria's house*
 20.16 ME COLD – *she is cold*

6.1.5. The copula

- 19.24 DANNY'S GONE
 V19.26 HERE IT IS
 20.10 TRIANGLE'S LITTLE
 20.15 DADDY'S WORKING REAL HARD
 21.02 THAT STRING'S STUCK
 21.22 THAT'S DADDY OVER THERE
 22.07 DANNY'S TALKING A CHRIS
 23.00 IT'S COLD OUT HERE
 23.00 THERE'S ROCKS IN HERE
 23.00 WHAT'S THAT UNDER HERE?
 23.00 HOLLY'S RIDING ON DOPEY
 23.00 WHAT'S THAT DOING IN THERE?
 23.00 WHAT'S THAT CAR DOING IN THERE?
 23.00 WHERE'S _____ ?
 V23.00 IT'S A TAPE RECORDER
 V23.00 THERE IT IS
 V23.00 HERE IS THE JELLO
 V23.00 IT'S MARIA'S SCHOOL
 V23.00 WHAT ARE YOU DOING – *three times*
 V23.00 THAT'S A PAPER TOO
 V23.00 IT'S HARD
 V23.00 WHAT COLOR IS THESE?
 V23.00 THAT'S A SQUARE
 V23.00 IT'S A TRIANGLE
 V23.00 IT'S THE EAR
 V23.00 I'M ON THE KEYS
 V23.00 HOW'S THIS WORK?
 V23.00 THAT'S WEEZER
 V23.00 IT'S JUST A BLACKBOARD – *two times*
 V23.00 WHO IS THAT?
 V23.00 THIS IS PETE

- V23.00 THERE THEY ARE
 V23.00 IT'S HARD
 V23.00 IT'S LITTLE
 V23.00 IT'S MY COCA-COLA
 V23.00 I'LL BE RIGHT BACK
 V23.00 DADDY, THAT'S ALL RIGHT
 V23.00 IS THAT ALL RIGHT, DADDY
 V23.00 IS THAT OFF PLEASE
 V23.00 I'S GREEN
 V23.00 IT'S YELLOW
 V23.00 IT'S THE BLACKBOARD
 V23.00 I'M GONNA GET MORE COCA-COLA
 V23.00 WE ARE AT SCHOOL
 A23.00 THERE'S A MOUSE
 A23.00 THAT'S HIM
 A23.00 WHAT'S THERE, DADDY?
 A23.00 IT'S HOT
 A23.00 WHERE IS MY BOTTLE? *-two times*
 A23.00 THAT'S MARK'S BOOK
 A23.00 THAT'S MY CHAIR
 24.00 WHAT IS THAT FOR?
 24.00 IT'S BY DADDY'S SHOES
 24.00 THIS IS MY BALL *-asserting*
 24.00 I'M SORRY I COUGHED AT YOU
 24.00 THAT'S THE KIND OF JELLY I WANT
 24.00 THAT'S TOO LITTLE FOR ME
 24.00 THE SEVEN-ELEVEN IS BY THE BEER STORE
 25.00 IT'S FUN TO PLAY WITH PUZZLES
 25.00 ZELDA'S SICK

6.2. Grammatical morphology: Noun-related and verb-related morphemes

The sentences of interest for analyzing noun morphology, verb morphology, noun phrase, verb phrase, and agreement are all reported elsewhere in the text and appendix in conjunction with the particular verbs involved. See the text of the appropriate subsections (6.2.1–6.2.5), and especially the accompanying tables, for collation of relevant data.

6.3. Complex sentences

6.3.1. Sentence negation

T's earliest negatives were uses of the word *no*; she also had a number of other negative words. See Table 6.9 for a summary and the appendix of each word for a listing. There are also a number of sentences in the diary consisting of "No!" followed by an affirmative sentence (e.g., "No! Draw it by the Santa Claus"). These are considered as a concatenation of two sentences and are

not listed. Below are listed sentences in which T attempts to negate a single idea in a single sentence.

- 21.08 NO! NOT LIKE THAT
- 22.05 I DON'T WANT IT
- 23.00 NOT FALL-DOWN PLAYGROUND
- V23.00 I CAN'T SEE
- V23.00 I DON'T REMEMBER
- V23.00 WON'T SPILL IT ANYMORE
- V23.00 CAN'T SWALLOW IT ANYMORE
- V23.00 I WON'T SWALLOW IT ANYMORE
- V23.00 I'M NOT GOING TO SWALLOW IT ANYMORE
- V23.00 HE CAN'T GET ME
- 25.00 I DON'T KNOW WHAT IT IS
- 25.00 I DON'T KNOW WHAT I ATE
- 25.00 DON'T SAY THAT TO ME

6.3.2. Questions

T's earliest questions were *where*-questions (see section 4.1) and the question "Whats-that?" both of which occurred throughout the duration of the study; these are not listed here. There are a few isolated entries in the diary in which T asked permission by using an affirmative sentence with a questioning intonation (e.g., "Bottle coming too?"); these are not listed. All other questions are listed. Listed separately are T's first *why*-questions that I recorded exhaustively during the 27- to 28-month period.

- 23.00 WHAT'S THAT DOING IN THERE?
- 23.00 WHAT'S THAT CAR DOING IN THERE?
- 23.00 WHAT HAPPENED?
- 23.00 WHAT HAPPENED TO THE BOOK?
- 23.00 WHAT'S THAT UNDER HERE?
- V23.00 CAN I PICK IT UP BY MY HANDS?
- V23.00 CAN I PLAY WITH THAT TOO?
- V23.00 CAN I HAVE MORE COCA-COLA?
- V23.00 HOW'S THIS WORK?
- V23.00 IS IT ALL RIGHT DADDY?
- V23.00 IS THAT OFF PLEASE?
- V23.00 WHO'S IS THAT?
- V23.00 WHO'S THAT?
- V23.00 WHAT COLOR IS THESE?
- V23.00 WHAT ARE YOU DOING?
- V23.00 YOU GONNA WIPE THAT OFF?
- V23.00 WHAT'S THIS?
- V23.00 WHAT HAPPENED?
- V23.00 WANNA BITE?
- V23.00 YOU WANT SOME TOO?
- V23.00 WANT SOME TOO?
- V23.00 WHAT YOU DOING?

- V23.00 WHO'S DOWN THERE?
- V23.00 CAN WE EAT IT?
- V23.00 WHERE YOU ARE?
- V23.00 CAN I HAVE A BITE?
- V23.00 WHATCHA DOING?
- V23.00 DO I GET COCA-COLA?
- V23.00 CAN YOU HOLD ME?
- A23.00 COULD I GET KNIFE?
- A23.00 WHAT'S THERE, DADDY?
- A23.00 DOES IT GO DADDY?
- A23.00 WANT SOME THAT TEA?
- 24.00 WHAT IS THAT FOR?
- 24.00 WHAT _____ DO? *—noise animal makes*
- 25.00 I LIKE _____. DO YOU?
- 25.00 THIS ONE IS _____. IS IT? *—name of object*
- 25.00 THESE ARE _____. IS THEM? *—name of group of objects*
- 25.00 THIS IS MY _____. IS IT?

WHY-Questions (27–28 months)

- 27.03 STRAWBERRY! WHY STRAWBERRY? *— parent said they have vanilla, chocolate, and strawberry*
- 27.03 WHY DON'T THEY HAVE BLUE ICE CREAM? *— same situation*
- 27.03 WHY THEY GOT THEM? *— after parent said "they have yellow and green ice cream"*
- 27.03 WHY ARE YOU GOING TO GET ME SOME? *— rice crispies*
- 27.03 WHY DID PAUL LEAVE HIS CAR? *— at our house*
- 27.04 WHOSE HAIR-DRYER IS THIS?
- 27.04 WHY IS IT YOURS? *— after Mommy replied that it was hers*
- 27.05 MOMMY, WHY YOU EVERDAY SMOKE SOME CIGARETTES?
- 27.05 WHY'S THAT BOY SPINNING AROUND UP THERE?
- 27.05 WHY YOU GONNA SING THAT?
- 27.06 WHY YOU WASH YOUR HAIR?
- 27.06 WHY IS IT RAINING?
- 27.06 WHY WE GOING TO THE DOCTOR'S OFFICE?
- 27.06 WHY ANN AND DAVE BOUGHT THIS?
- 27.06 WHY DID YOU WASH YOUR HAIR?
- 27.06 WHY IS IT COLD? *— after she had asked "can I roll down the window" and a parent had replied that it was cold*
- 27.06 WHY DID DADDY PUT HIS CIGARETTE IN THERE? *— toilet*
- 27.07 WHY HE'S NOT IN HIS BED?
- 27.07 MOMMY, WHY YOU'RE WRITING?
- 27.07 WHY HIS FOOT STANDING RIGHT THERE IN THE FLOWERS?
- 27.07 WHY HIS FOOT STANDING IN THE TREE?
- 27.07 WHY HE GO TO SCHOOL? *— Daddy*
- 27.08 WHY YOU PUT THOSE PILLOWS IN HERE? *— bagswing*

- 27.08 WHY THE MEN WORKING ON LINDA'S HOUSE?
27.08 WHY THE CARS COMING?
27.08 WHY HE PUT THOSE MARSHMALLOWS ON THERE?
27.09 WHY IS TRASH UGLY? – *after Daddy said it was*
27.09 WHY HIS FEET ARE COLD – *after parent said so about giraffe in book*
27.10 WHAT'S THIS PENCIL DOING RIGHT HERE?
27.10 WHY'S THAT BOY SPINNING AROUND?
27.10 WHY YOU GONNA SING THAT?
27.11 WHY IS IT DARK?
27.11 WHY YOUR ARMED BROKEN?
27.11 WHY IS THAT ON YOUR SHIRT?
27.12 WHY DID YOU SAY COME INSIDE?
27.12 WHAT'S BUGS BUNNY DOING IN THAT CHOO-CHOO TRAIN?
27.13 WHY HE TAKES ALL THE TOYS TO BED? – *story in book*
27.13 WHY I'M CRYING IN THAT PICTURE?
27.13 WHY I'M SAD? – *a picture of her crying*
27.13 WHY DID DADDY STAY HOME?
27.13 WHY DOES HE HAVE WORK TO DO?
27.14 WHY'S PAUL SLEEPING IN THERE?
27.15 WHY MOMMY PUT THOSE IN THERE? – *eggs in glass*
27.15 WHY CHRIS GO TO HER HOUSE?
27.15 WHY YOU RACE CARS ON HERE?
27.16 WHY YOU MAKING YOUR COFFEE?
27.16 WHY DO THEY HAVE STARS OUT THERE?
27.17 WHY'S IT BROWN? – *sofa*
27.17 WHY HE LEFT HIS TOY HERE?
27.17 WHY DADDY LEFT HIS WINDOW OPEN?
27.18 WHAT ARE THOSE NAILS DOING UP THERE?
27.18 WHAT IS THE WIND BLOWING MY CURTAINS FOR?
27.18 WHY YOU PUT THIS IN HERE? – *trying to put on helmet (means how?)*
27.19 WHY ARE YOU GOING TO DADDY'S OFFICE?
27.19 WHY IS HE GETTING THAT SQUIGY?
27.19 WHY YOU PUT THAT THERE? – *string around a tool kit*
27.19 WHY I HAVE DIARRHEA? – *Mommy said no juice because you have diarrhea*
27.19 WHY YOU WASH MY HAIR?
27.20 WHY ERNIE HAS THAT BANANA IN HIS EAR?
27.21 WHY IS MOMMY STAYING HOME?
27.21 WHY WAS IT AN ACCIDENT? – *Daddy told her that Dana's broken arm was an accident*
27.23 WHY DID YOU SPILL THAT MILK?
27.23 WHY IS THAT FULL OF GRASS? – *lawn*
27.25 WHY ARE WE STOPPING? – *red light*
27.27 WHY IS HER RIDING ON THAT HORSE? – *on TV*

6.3.3. Sentences with two verbs

- 19.27 STOP PUSH ME – *on swing*
 19.30 WATCH ME DOORS OPEN – *getting in cabinet (close?)*
 20.04 LOOK AT A GIRL DRINKING A KOOL-AID – *girl is*
 20.04 LOOK WEEZER CLIMBING A TREE – *cat in tree*
 20.13 STEP COOK DINNER – *stepped on top of pot*
 20.27 COME GET ME STUCK – *she is stuck and needs help*
 20.28 COME-ON SIT ME – *wants Mama to sit with her*
 21.02 COME HELP ME – *needs help getting string*
 21.06 PICK THAT COFFEE UP DRINK
 21.09 BRING A PAPER-TOWEL WIPE ME OFF – *command to Mama*
 21.10 LOOK AT PETE EATING A BONE – *he is*
 21.27 HAVE MOMMY FIX IT – *her toy broke*
 21.27 GO SEVEN-ELEVEN BUY MORE COCA-COLA – *she wants to*
 22.07 MOMMY GAVE THAT CEREAL FOR ME TO EAT – *she did*
 V23.00 I WANT TO TAKE ONE AT A TIME – *Cheetos (chips)*
 24.00 I GO OUTSIDE TALK TO MARIA? SHE COME HERE? – *asking*
 us
 24.00 TAKE THIS AWAY AND PUT IT ON THE TABLE – *doing it*
 24.00 I'M SORRY I COUGHED AT YOU – *telling Mama*
 24.00 THAT'S THE KIND OF JELLY I WANT – *pointing*
 25.00 YOU STAY RIGHT THERE AND I THROW IT TO YOU – *tells*
 Daddy to
 25.00 I LOVE TO EAT PRETZELS – *doing it*
 25.00 IT'S FUN TO PLAY WITH PUZZLES – *doing it*
 25.00 I WANT TO GET IN YOUR LAP – *she does*
 25.00 I WANT TO HOLD YOUR TEA – *she does*
 25.00 I WANT TO DRAW WITH STU'S PEN – *Daddy has it, she wants it*
 25.00 THIS ONE I LIKE BETTER
 26.00 I WANT THAT TOY THAT I FOUND – *she found toy in bushes*
 earlier. Now in tub wanting that toy.

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