

LANGUAGE ACQUISITION AND THE 'DATIVE ALTERNATION'

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What do *give* and *tell* have that *donate* and *say* haven't got? The former verbs to dativize, i.e., take the structure S V IO O, while the latter verbs do not. Most attempts to discover the qualities that set dativizing verbs apart from other verbs assume that there is a special link between the dative structure and the prepositional structure S V O PREP IO; that the dative structure is acquired separately from other structures; and that, given the right framework and sufficient granularity, it is possible to describe the set of semantic characteristics uniquely characterizing dative verbs. This paper uses child language data to show that there is no need to posit special dative rules or a special semantic class of dative verbs and that the dative structure is acquired in the same way as other syntactic structures.*

1. INTRODUCTION. A peculiarity of English and many other languages is that some verbs which subcategorize for three nominal arguments code these arguments as subject, object and object of a preposition (OP), while other three-argument verbs code one argument as subject and the other two as objects. Still other verbs, sometimes called alternating verbs, allow the speaker to choose between the subject-object-OP, or prepositional, construction and the double-object, or dative, construction. Recent studies have sought to capture the semantic and syntactic qualities shared by alternating verbs in contrast with other verbs. These studies share several assumptions, namely: that the relationship between the prepositional and double-object construction is that of an alternation, such that the speaker chooses between one construction or the other; that the two structures are joined by some syntacto-semantic link and that the speaker understands the nature of this link; and that the ability to code correctly the arguments of alternating verbs is acquired as a special rule or set of rules applying to a semantically delimited verb class. Some analyses focus on the formal relationship between the double-object and prepositional constructions; others examine the functional relationship(s) between the two; still others try to discover how it is that children alternating verbs from non-alternating verbs; still others try to discover how it is that children acquire the dative alternation. In this paper I compare and contrast several recent approaches, then visit the problem once more from the perspective of child-language data. I show that these data challenge the underlying assumptions of most recent analyses of dative constructions. Specifically, the data suggest that the 'dative alternation' does not exist for the child as an alternation *per se*. Therefore, at least in the realm of child language, there is no need to posit a direct link between the prepositional and double-object constructions, hence no need to posit special rules governing such a link. Whether child language findings have any bearing on adult syntax is a separate question, one that will be addressed in §5. My findings have implications for any analysis of dative constructions that appeals to language acquisition experiments for evidence (cf. Gropen et al. 1989) or that assumes the acquisition of a special dative rule (cf. Dryer 1986, Larson 1988 and others).

The fact that some verbs dativize—that is, take the structure S V IO O—is not a new issue. Dryer 1986 discusses the problem within the framework of Relational Grammar (RG), wherein the dative construction traditionally is viewed as an instance of indirect object advancement from initial 3 (indirect object) to final 2 (direct object). At the same time, the object is demoted from 2 to chômeur (cf. Perlmutter and Postal 1983). Dryer observes that there appears to be a cross-linguistic dichotomy between (a) languages that treat the indirect object (benefactive/recipient) of a dative construction much like the direct object (patient/theme) of a monotransitive construction and

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(b) languages that treat all patient/theme direct objects alike but give special status to indirect objects. This dichotomy, he suggests, is analogous to the dichotomy between accusative and ergative languages. He also observes that languages that distinguish between direct object (patient/theme) and indirect object (benefactive/recipient) appear to be coding semantic role distinctions, while languages that treat the indirect object of a dative clause and the direct object of a monotransitive clause alike while assigning oblique status to the patient/theme of the dative construction appear to be coding discourse/pragmatic functions, such as greater and lesser topicality.

The RG approach, as presented in Dryer 1986 and in Perlmutter and Postal 1983, implicitly assumes that the benefactive/recipient role of the 3 argument is an inherent part of the argument structure of the verb. This is a useful assumption, in that it directs attention to the similarities and differences among surface means of coding arguments, these being the only tangible evidence that something is being coded. Unfortunately, RG representation ignores an entire realm of syntactic coding. By consistently placing the verb on the left side of the representational diagram, followed by the subject and then the object or indirect object, RG overlooks any syntactic or pragmatic functions that may be performed by word order. In the case of the dative alternation, this omission is critical, since the double-object and prepositional constructions differ not only in the presence/absence of a preposition but also in the positions of IO and O. Furthermore, the positions of IO and O differ not only with respect to each other but with respect to the verb. These differences are important. In English, for example, the position immediately after a transitive verb is usually occupied by the object, e.g.:

- (1) *I met your brother last week.*

Omitting the object or displacing it from its normal position usually affects the meaning and/or grammaticality of the clause:

- (2) a. **I met last week.*
b. *??I met last week your brother.*

Three-argument clauses represent a special instance in which an unmarked argument that is (arguably) not the direct object can appear in the position immediately after a transitive verb without rendering the sentence meaningless:

- (3) *John sent Mary the book.*

Moreover, if and only if the DIRECT object appears in its 'normal' postverbal slot, the indirect object must be marked by a preposition:

- (4) a. *John sent the book to Mary.*
b. **John sent to Mary the book.*

Any importance that may be attached to these facts is lost in RG, where representational conventions require that morphology and prepositions carry the entire syntactic load of the clause.

There is considerable discussion of the double-object construction within Government and Binding (GB) Theory, perhaps because the double-object construction poses difficulties for so many theory-internal assumptions: for example, the assigning of abstract Case. It is assumed that a transitive verb phrase contains one internal argument (the object) to which the verb assigns Case. GB representation prefers a binary branching structure in which $S \rightarrow N\ VP$ and $VP \rightarrow V\ NP$. The NP under VP is assigned abstract accusative Case (which may or may not be morphologically marked) by the verb. A verb phrase whose structure is $V\ NP\ NP$, such as *(John) gave Mary the book*, apparently violates binary branching as well as the constraint that the verb assigns Case to only one internal argument. A number of theory-preserving solutions have been proposed. X-bar theory, which allows an intermediate level of representation between the phrasal level and the

lexical level, allows the two objects to be accommodated as follows: VP → V' NP [*the book*], while V' → V NP [*Mary*]. While this representation is satisfactorily binary, there remains the problem of how the NP under VP [*the book*] sometimes occurs as the NP under V', in which case the NP under V' becomes the NP under VP and acquires a preposition in the process. (My use of the verb 'become' in the preceding sentence should not be taken to imply that either structure is more basic than the other or that a transformation is involved, since GB has abandoned such notions.) One solution, proposed in Kayne 1984 and in Haegeman 1992, rests on the assumption that there are two different kinds of Case. Chomsky 1986 calls these structural case and inherent case. By definition, inherent case survives passivization while structural case does not. The NP *the book* has abstract accusative Case in both sentences of the following pair, while *John* has accusative Case in 5a and nominative Case in 5b:

- (5) a. *I gave John a book.*
b. *John was given a book.*

Since *John* loses its accusative Case in the passive construction 5b, the Case marking of *John* must be structural (so the argument goes). Since *the book* retains accusative Case, its Case must be inherent. Kayne 1984 argues that the verb *give* thus subcategorizes for only one internal argument, the indirect object. The other argument of the ditransitive verb is inherently Case marked and thus does not disrupt either the binary structure of representation or the assumption that a verb phrase has only one internal argument.

This approach is more theory-preserving than explanatory. It does not explain how or why *the book* receives inherent Case from a ditransitive verb but structural Case from a monotransitive verb. It does not explain how the verb assigns structural Case 'across' the direct object in the prepositional construction *I gave the book to John* or what mechanism inserts the preposition *to* into this construction. Larson 1988 suggests a variation in which the double-object construction results from movement in which the argument in VP (indirect object) is 'demoted' to an adjunct position (i.e., made a sister of V'), thereby removing Case from the NP *the book* and forcing it to move to the position after the verb in order to be re-assigned Case. He accounts for this phenomenon in terms of deletion and recoverability of the Case-assigning preposition *to*. What motivates the movement of indirect object into an adjunct position is left unexplained, as is the procedure of Case 'removal'. Positing the characteristics of deletion and recoverability for *to* is not in itself an explanation, since it amounts to a restatement of the empirical fact that there is a *to* in the prepositional construction but not in the ditransitive.

The preceding accounts are almost entirely shaped by assumptions internal to GB. For example, it is GB's preference for binary structure (which is based on the assumption that children can master binary choices more readily than multiple choices) that makes the existence of ditransitive verbs appear to be a problem. A representational system that assumes a flat, flexible or multiple-branching structure could easily accommodate ditransitive verbs. Similarly, since there is no visible Case marking on *the book* in either 5a or 5b, it is only the assumed existence of abstract Case that makes the putative 'survival' of accusative Case in 5b problematic. And it is only the fact that survival under passivization is a presumed hallmark of inherent Case that allows the problem to be resolved; elsewhere, there is no independent support for any formal or functional difference between inherent and structural Case. One wonders whether binary branching and abstract Case would be part of GB at all were it not for the fact that GB's predecessor theories were based on English (Frajzyngier p.c.).

Hudson 1992 recalls Dryer 1986 in its comparison of benefactive/recipient indirect objects with patient/theme direct objects. Hudson argues that the benefactive/recipient in an English dative clause behaves much like the direct object of a monotransitive clause and is therefore the 'real object' of the dative construction. An obvious difference between the double-object and the prepositional construction is that the former places the IO after the verb, in the normal (for English) direct object slot. By means of syntactic tests, Hudson shows that this is not the only way in which the indirect object of a verb like *give* seems more 'object-like' than the direct object.

Hudson 1992 does not follow this important observation to its conclusion. Had he done so, he might have addressed at least two other questions: First, what accounts for the presence of a preposition in the S V O PREP IO constructions? Second, what accounts for the fact that verbs like *give* uniquely allow two unmarked arguments after the verb, if and only if the first unmarked argument is the recipient? In other words, how does the hearer know what roles to assign to the arguments of the clause?

I propose that the presence of the preposition in the S V O PREP IO construction is motivated by the fact, demonstrated in Hudson 1992, that the indirect object is the normal occupant of the postverbal slot:

(6) *John gave Mary the book.*

Displacing this argument from its normal position requires that the role of the argument be marked in some other fashion, in this case by the presence of the recipient-coding preposition *to*:

(7) *John gave the book to Mary.*

This coding is analogous to the prepositional coding of subject in a passive clause, where it is the subject that is displaced from its normal position:

- (8) a. *John kissed Mary.*
b. *Mary was kissed by John.*

Failure to provide compensatory coding for the displaced recipient results in ambiguity or incomprehensibility, depending on context and the semantic nature of the NPs. **John gave the book Mary* is unacceptable because an inanimate argument is not a reasonable recipient for an animate object. Substituting an animate argument allows the first postverbal argument to be interpreted as recipient, but leaves *Mary* as the unlikely object of transfer: ?*John gave Bill Mary*. Conversely, prepositional coding when the recipient is in its normal position is ungrammatical in most instances: **John gave to Mary the book*. In short, the presence of *to* is essential for meaning and grammaticality if and only if the recipient is displaced from its normal position.

If displacing an argument from its normal position requires compensatory prepositional coding, why is it that the direct object can occupy either the postverbal slot or the post-IO slot without prepositional coding in either instance? The answer lies in the argument structure of verbs like *give*. Such verbs, because of their inherent semantics and/or the extralinguistic contexts in which they occur, call for three arguments. Evidence for this lies in the ungrammaticality, in all but the most limited contexts, of a *give* clause containing fewer than three arguments:

- (9) a. **John gave Mary.*
b. ?*John gave the book.*

On hearing *give*, the listener expects two more nominal arguments in the clause. Because the unmarked object of *give* is the recipient, the hearer interprets the first postverbal argument as the recipient. The next argument may either be unmarked or be marked by preposition. If it is unmarked, the hearer automatically assigns to it the direct object role, since all of the other roles inherent in the argument structure of *give* have been filled. If the second postverbal argument is marked by preposition, the hearer 'goes back' and reassigns the direct object role to the first postverbal argument. Provided the semantic features of the NPs fit the roles assigned to them, this reassignment is accomplished readily and without loss of comprehension.

Hudson makes the peripheral but important observation that at least three different 'grammars' or hypotheses might account for the rules concerning double-object constructions in English (Hudson 1992:274). The fact that native speakers concur as to the grammaticality of double-object constructions using core verbs like *give* but differ when it comes to marginal data suggests that different speakers actually 'have worked out different grammars on the basis of roughly the same

input' (Hudson 1992:269). The notions that speakers work out their own grammars and that several grammars could produce the same core data will be returned to in the discussion of language acquisition data (cf. §3).

Language acquisition data form the foundation of the last paper discussed in this section. In Gropen et al. 1989, language acquisition data and experimentation are claimed as direct evidence for certain hypotheses about the status of the dative alternation in adult language. The central question is a perceived paradox concerning alternating verbs like *give* and *tell*. The authors observe that the dative alternation is clearly productive, since both adults and children are able to apply it to new coinages and made-up verbs, yet children acquiring English somehow manage to avoid extreme overgeneralization of the dative rule. Where overgeneralization does occur, it is with verbs that share some semantic features with verbs that adults correctly dativize. The authors propose that speakers possess a special set of lexico-semantic and linking rules which they apply exclusively to a semantically and morphophonologically defined class of verbs, the alternating verbs.

To test their hypothesis, Gropen and his colleagues performed two child-language experiments designed to test whether children acquire the dative alternation by means of a productive criteria-based dative rule. Children were presented with a variety of situations in which an object was transferred from the experimenter to a recipient. Experimenters then posed questions to the children concerning what had happened to the object and what had happened to the recipient.¹ Generally, the researchers found that their subjects were able spontaneously to produce double-object constructions for made-up verbs. They conclude that children have a productive rule for the dative alternation and that its application is not limited, as the principle of strict conservatism would predict, to verbs that adults have been heard to use in the dative construction.

The model that Gropen et al. 1989 proposes for the dative alternation is implicitly unidirectional and semantics-driven. It is argued that the speaker, whether adult or child, constructs a complex, multi-layered semantic representation of each verb, based on the situations in which she has heard these verbs uttered (cf. Pinker 1987 on the features of events that speakers are presumed to attend to). The speaker discovers that there is a subclass of verbs having the basic semantics [CAUSE *y* TO GO TO *z*] which can be altered, via a unique lexico-semantic rule, to mean [CAUSE *z* TO HAVE *y*]. The speaker learns the semantic, morphophonological and idiosyncratic criteria which allow some verbs into this narrowly prescribed class and keep others out. For novel verbs, like the made-up verbs of the experiments and other verbs new to her lexicon, the speaker builds a multi-layered semantic construction from scratch and compares it at all points with the subclass of dativizing verbs to determine whether or not the lexico-semantic rule may be applied to the novel verb. If the answer is yes, the speaker applies the special dative linking rule that maps the slightly altered semantics onto the double-object construction.

There are a number of shortcomings in this account. First is its failure to justify the implication that semantics is somehow prior to and independent of syntax. Second, even if we accept that the mechanism behind the dative alternation is entirely semantic, not all of the verbs which undergo the dative alternation truly have the semantics [CAUSE *y* TO GO TO *z*] (cf. Goldberg 1991); therefore, the proposed lexico-semantic rule cannot be said to apply to all alternating verbs. This would seem to require either different lexico-semantic rules applying to different verb classes or a reworking of the whole hypothesis. Furthermore, since componential semantic definitions are notably cumbersome and controversial, how likely is that every speaker employs the same set of semantic features to classify verbs as alternating or non-alternating? Finally, Gropen and his colleagues state that prepositional and double-object constructions are acquired by children at about the same time and with apparently equal ease or difficulty, yet their account implies that the dative construction is derived from the subject-object-OP construction. The hypotheses proposed in Gropen et al. 1989 do raise two important issues that pertain to both syntactic theory and the study

¹ Since Gropen et al. 1989 contains an adequate discussion of obstacles encountered during the experiments and possible weaknesses of the findings, I refrain from such discussion here and focus on the theoretical implications.

of language acquisition. The first, which the authors address explicitly, has to do with the presumed problem of limited overgeneralization in child language. The second issue, which is implicit in the structure and argumentation of the paper, has to do with using child language data to support claims about adult language. I address both issues in the data-based portion of the paper and in my conclusions.

2. HYPOTHESIS. Gropen et al. 1989 assumes that the dative alternation exists for speakers—including children—AS an alternation and poses certain mysteries which speakers—including children—must solve, namely: Why do some three-argument verbs alternate while others do not? What do all alternating verbs have in common, in comparison with all non-alternating verbs? What is the precise relationship between the semantics of the alternating verbs and each of the two possible syntactic structures?

My data suggest that the existence of the dative alternation does not, at least for the child, pose the problems that Gropen et al. 1989, Goldberg 1991 and others assume speakers must grapple with. Therefore, it is not necessary for the child to command the special dative rules these writers postulate. I propose that the dative construction is no more problematic for the child than any other construction and is acquired in precisely the same way, as one of a number of means available in the language for coding and arranging the arguments of a verb. Moreover, the child does not acquire the dative alternation AS an alternation, but instead acquires the prepositional and double-object constructions as distinct, though semantically and pragmatically related, syntactic forms.

My hypothesis is based in part on the assumption that the child's step-wise mastery of English syntax is driven by the fact that English is an SVO language which has prepositions (Frajzyngier p.c. and Frajzyngier and Shay in progress). For most verbs, this means that there are two slots, preverbal and postverbal, which may be occupied by nominal arguments that are not marked by preposition. If both slots are filled (or if the verb normally takes only one argument), additional arguments may be added to the clause if they are marked by appropriate prepositions, e.g.:

- (10) a. *Mary ate lunch.*
- b. *Mary ate lunch at the table.*
- c. *Mary ate lunch at the table in the dining room.*

There are a few verbs whose semantics require three arguments, usually two animate and one inanimate. Some of these verbs allow two postverbal arguments not marked by preposition, provided the argument closest to the verb meets certain semantic criteria and that such an argument is compatible with the meaning of the verb. Frajzyngier (p.c.) has argued that these 'dativizing' verbs are verbs whose inherent meaning includes, or can include, the notion that the action is done for somebody's benefit, advantage etc. Thus, *cook* may dativize while *ruin* does not, except in very limited pragmatic circumstances:

- (11) a. *I cooked her a dinner.*
- b. *??I ruined her a dinner.*

Even if it is expanded to include the notion of recipient of a verb of motion or transfer, this observation does not account for all instances of dativizing verbs, as in the following:

- (12) a. *Mary denied her secretary a raise.*
- b. *John envied Bill his aesthetic sense.*
- c. *The mistake nearly cost him his life.*

Nor does it explain why some verbs whose inherent meaning includes the notion of benefit (e.g. *donate*, *credit*) do not felicitously take the dative construction, e.g.:

- (13) a. *?Mary donated United Way \$100.*
- b. **Becky credited Bill's account \$100.*

It is likely that verbs calling or allowing for a benefactive argument constitute the core class of dativizing verbs and that marginal instances like those in 12 are the result of historical accident or perhaps 'metaphorical licensing' of the kind proposed in Goldberg 1991. In any case, Frajzyngier's suggestion sheds light on the language acquisition data, which suggest that children learn the rule that a benefactive or recipient argument may appear in the slot immediately after the verb and are able to use this rule productively long before learning marginal instances like those in 12 and exceptions like those in 13.

To understand the benefactive role of the postverbal argument in a three-argument construction is not the same, however, as to perceive that this construction 'alternates' with some other. The child does not need a rule of dative ALTERNATION. When she wants to talk about an event involving three arguments, her goal is to communicate her ideas and thereby get what she wants. She may know from her linguistic input that there are two ways in English to include three arguments in one clause, but she need not notice or care whether the three-argument verb she wants to use right now is one that 'alternates'. Thus, the dative and prepositional constructions may be acquired as independent syntactic patterns without reference to any but the crudest semantic concepts, perhaps limited to number and animacy of arguments and the notions of giving, receiving and benefit. In short, child language data neither suggest nor support positing a rule linking the prepositional construction directly with the double-object construction.

There remains the problem of why children neither grossly overproduce dative constructions nor strictly limit their application of the dative construction to verbs that are dativized by adults. In Gropen et al. 1989, limited overgeneralization is held to be the product of lacunae in the multi-layered semantic representation that the child will eventually develop for each verb in her lexicon. As these representations become more sophisticated and the gaps are filled in, the verbs the child has wrongly placed in the alternating class will be systematically excluded on the basis of one or more sophisticated semantic or morphophonological criteria. Presumably, all speakers ultimately arrive at the same set of criteria and are able to apply these criteria at will to sort novel verbs into the proper classes.

In the child language literature, overgeneralization is admitted as evidence that the child has learned a rule. A well-known example is the child's overgeneralization of the regular past tense to produce forms like *rided* and *cameed*, which is taken as evidence that the child has learned the rule that the suffix [-d] and its allomorphs mark an action as having been done in the past.

Presumably, then, the paradox of limited overgeneralization lies not in the fact of overgeneralization but in the fact that it is limited. And why shouldn't it be? There is no evidence that children attach the regular past tense marker to nouns, for example, or that they use it to code both past and future tense. This is because information about function and environment are essential components of the rule. Once a child produces a single wrong application of the dative construction, e.g., *say me a story*, this is evidence that she has learned the form, core function and environment of the dative construction. Overgeneralization of the form OUTSIDE of this function and environment, i.e. unlimited generalization, would be cause for remark; overgeneralization within the appropriate environment is not.

This leaves two other problems: How does the child learn to stop overgeneralizing? And how is it that both children and adults generally agree upon which made-up verbs and novel coinages properly dativize?

The first question, that of unlearning wrong forms, is an issue for a general theory of language acquisition and is addressed in §3. The second question answers itself. Overgeneralization shows the presence of a rule. If a rule works, in that it allows the speaker to get the point across, there is no reason to scrap it, though there may be ample reasons to modify it and constrain it. If a child can be shown to command a rule that works, we can assume that the rule is retained in some form in the adult grammar, perhaps as the core of some more elaborate rule. In the case of the dative structure, the core rule states that the benefactive argument of a verb may follow the verb and precede another unmarked object. It is because this core rule is productive in adult language that adult speakers are able to employ the dative structure for newly coined verbs, such as *fax*, that allow a benefactive or recipient.

To summarize my hypotheses: Children do not acquire the dative alternation as an alternation and therefore do not need either semantic or syntactic rules transforming the prepositional structure into the dative structure. What children acquire is two separate syntactic structures for accommodating three arguments. They learn that one of these structures, the one with two unmarked objects after the verb, is reserved for situations involving one inanimate argument and two animate arguments, one of whom receives something or benefits from something. Because much of adult syntax is idiosyncratic and conventionalized, applying this rule every time the environment arises results in overgeneralization. Overgeneralization is gradually reined in through negative evidence and lack of direct positive evidence (see §3). The process of developing adult grammar out of child grammar is largely a process of constraining rules and acquiring conventions. Continued productivity of the core rule is evidenced by its application to novel coinages. In short, if the notion of a direct relationship between the prepositional construction and the double-object construction is productive for adults, its existence must be demonstrated in some way other than by means of child language data.

In what follows, I examine these hypotheses in light of language acquisition data from my daughter, herein called 'F', between the ages of 22 and 28 months. I show that her utterances using transfer verbs like *give*, which dativize in adult language, do not differ in any important way from her utterances using other three-argument verbs like *put*, nor do they differ significantly from her contemporary utterances using one- and two-argument verbs. Her acquisition of dative and prepositional constructions appears to follow language-wide patterns of experimentation and may be accounted for by only the broadest grasp of event-based semantics. These facts support the claim that children do not learn the 'dative alternation' as an alternation *per se*; rather, they learn that the arguments of some verbs may be coded in two different ways, depending on circumstances. The child learns which verbs and which circumstances in the same manner in which she learns the meaning and usage of any other lexical item or construction.

This paper is based primarily on diary data, which has the defect inherent in all diary data of being biased towards the new and the unusual. I have focused on two types of utterances: language 'errors' and first-time productions of 'right' forms. I take errors to be evidence of the child's current grammar, i.e. her hypotheses as to the rules governing language structure. Such errors are the primary window on the child's active engagement in the acquisition process and one of the primary pieces of evidence that language is acquired not by rote but by rule. I have not attempted to keep track of the frequency of errors. I have, however, continued to record errors after the corresponding correct form has been produced, thus providing some record of the rate of extinction of 'erroneous' hypotheses as well as a record of the co-existence of overlapping or even conflicting hypotheses.

3. THE LANGUAGE ACQUISITION PROCESS. It is not the goal of this paper to defend a particular model of language acquisition, but rather to view a particular problem in the light of acquisition data. In this section, I present some key facts and assumptions concerning the process of language acquisition.

It has been shown that very young infants can distinguish speech sounds from non-speech sounds; store sets of sounds and recognize new sounds as not being part of the old set (Jusczyk 1992); imitate facial expressions (Meltzoff and Moore 1993); and alter these imitations to make them more and more like the target. These findings imply that infants are born with at least a few basic cognitive tools which they are perhaps primed to use in language situations. These tools include the ability to attend, to remember, to imitate, and to monitor and correct one's own production. Child phonology studies present strong evidence that the child has a mechanism for producing rule-based output that is similar in a systematic way to the input she receives and a mechanism for gradually eliminating from her output those exemplars that are not positively reinforced by input exemplars (Menn 1983, Peters and Menn 1993). The young child's ability to produce three-argument constructions that improve with time, gradually coming closer and closer to the adult version, is driven by the desire to communicate and is a logical and step-wise outgrowth of the infant's ability to attend to, remember and imitate facial expressions and sounds.

Not only must the child learn to produce correct three-argument constructions, she must learn to produce them at the right time and in the right place in order to achieve her communicative ends. By making associations among lexical items, events and communicative purposes, the child discovers what a verb means, how many arguments it typically occurs with, what types of arguments these are, and in what situations to use the verb and its arguments. Pinker 1987:54 states that speakers attend to certain features of the situation in which a verb is used: the 'Main Event' (state or motion); path, direction or location of an object; causation; manner; temporal distribution; and others. Gleitman 1993 argues convincingly that some of the values for which Pinker argues are not necessarily primitives from the learner's point of view. Even if they were, and if these features were obvious to every speaker in every context, a full compendium of perceptual features still would not be sufficient to provide the learner with everything she needs to know about how and when to use the verb. Something more is needed.

That 'something more' may be a generalized ability on the learner's part to 'stack' all of the linguistic environments in which she has heard the verb and all of the extralinguistic environments in which she has heard the verb and to sift through these stacks for common features (Menn p.c.). This view does not require the learner to attend to and remember every perceptual aspect of every event or every linguistic element of every utterance. Given enough input exemplars, the consistent and salient features of events and utterances will tend to gain prominence as less frequent features will tend to be ignored (cf. Peters and Menn 1993). Through this subconscious stacking and sifting the child builds a small set of verbs that adults use in certain situations involving three persons, objects or places. At the same time and by the same process, she learns the ways in which three arguments may be accommodated by English syntax.

The elimination of overgeneralized forms also depends on the 'stacking, sifting and salience' mechanism. It is generally agreed that children receive little direct negative evidence, which is to say that they are rarely told when they have used a wrong form. The lack of direct negative evidence has been used as an argument in favor of theories of innate syntax, but these arguments ignore the possibility of indirect negative evidence as well as various types of positive evidence (cf. Bowerman 1983). One kind of positive evidence occurs when the child's utterance produces the desired effect on her hearers. Another kind occurs when a child hears an adult utterance that is structurally similar to an utterance of her own. Indirect negative evidence occurs when a child produces a rule-driven wrong form, such as *say me a story*. Her stacking, sifting and salience mechanism allows her to compare her own utterance against other people's utterances using *say*. She finds, over time, that her construction is not matched by any adult model. She may continue to produce the wrong form for some time, perhaps 'waiting' for an adult model to come along that matches hers (for evidence that output forms are stored and resist change, cf. Menn 1983), but eventually she will realize that all of the dative structures using *say* have occurred in her output and none (or almost none) in the adult input. At the same time, her correct forms using *say* with a prepositional addressee are being reinforced by equivalent models in her input. As Bowerman 1983 points out, repeatedly NOT hearing the expected form *x* in a given context *C*, coupled with repeatedly hearing a contrastive form *y* in the same context, may make the non-occurrence of *x* in context *C* relatively salient. Just as the newborn attempting to imitate an adult facial expression abandons early off-target attempts in favor of closer approximations, the speaking child abandons utterances that do not match the adult version in favor of those that do. The question of negative evidence is moot; what matters is that the child eliminates forms that are not reinforced in adult language, thereby modifying her rule-based production according to the conventions and constraints of the language surrounding her.

A few comments about data representation and analysis in the present paper are in order. Bowerman 1983 observes that the child's acquisition of language can be characterized as the process of constructing an internal grammar. I have argued that child language errors are evidence of the child's grammar at a given time. The fact that they may be called 'errors' means that the child's grammar is not the same as adult grammar. This issue, which I revisit in §5, raises problems for data analysis. Take the following example from the corpus:

(7) *I read Daddy.*

for 'Daddy read to me.' (PAST TENSE)
AGE: 1;10.16

I am certain of the gloss, having been present for both the event and F's reporting of it. Ex. 7 shows that F, at this age, does not use SVO order to code syntactic roles. Nor does she use OVS order, since 7 co-exists with contemporary 'SVO' examples:

- (8) *I read books.*
for 'I'm reading books'
AGE: 1;10.14
- (9) *Okee bump me.*
for 'Okee bumped me.'
AGE: 1;10.11

She does not rely on case marking to code syntactic roles, since the pronoun in 7 is not marked as object, even though the case-marked form *me* is in her vocabulary (cf. 9). The preposition *to*, which is not in her contemporary vocabulary, is not used as a coding device. It appears that her grammar does not respect grammatical relations. Instead, the first stressed element of an utterance is the person or object (or, rarely, action) which is for some reason salient. The remainder of the utterance is a comment on the first element. Hence, the following 'glosses':

- (10) */xxx/ clown. Diaper.*
'See the clown? I'm putting a diaper on it.'
- (11) *Cart. Baby cart.*
'Look at the cart. There's a baby in the cart.'

Many factors may contribute to the salience of the first stressed element. One is the absence of something expected:

- (12) *Medicine duck?*
'Where's the medicine for the duck?'
(F is holding the duck and searching for the bottle of 'medicine')

Another is contrastive focus:

- (13) *Lucas goggles.*
'Lucas has goggles'
(F sees a pair of goggles; Lucas is not present)
- (14) *Bucket medicine?*
'Can I give some medicine to Bucket?'
(F has been giving 'medicine' to her stuffed animals and now wants to give some to her doll, Bucket)

Semantic 'themes' also tend to be salient:

- (15) *Chair. Move.*
'I'm moving the chair.'
- (16) *Truck. Have-it.*
'Give me the truck.'

Since the fronting of an argument or predicate is often the only evidence for its salience, the existence for F of a 'Topic-Comment' type of syntax remains speculative. If it does exist early on, it is gradually replaced by some other system(s), with no clear line of demarcation between one system and another. In analyzing such data (or any data), the linguist faces the same problem that

the child faces: that of trying to induce the rules that produced a body of data when several different sets of rules may account for the same data, when the data will never provide all of the exemplars necessary to prove the existence of the rules. For the present paper, what this means is that talking about F's utterances in terms of adult syntactic categories is misleading, since F does not use adult syntax. To call 7 an OVS construction is to assume that F has tried to duplicate adult syntax and failed, when in fact there is every reason to assume that what she said was correct according to her grammar of the time.

Since I find some system of notation indispensable, I have arrived at the following compromise: My examples consist of three-line glosses. The first line is a transcription of F's utterance. The second line is a free 'translation' based on context and my contemporary interpretation of F's grammar. The third line identifies the elements of the adult version that F included in her version, without reference to the actual coding means on which F relies.²

4. THE STEP-WISE ACQUISITION OF ARGUMENT STRUCTURE

4.1. THREE-ARGUMENT CONSTRUCTIONS AT PHASE ONE. At the beginning of this study, which I call Phase One, most of F's utterances consist of tone groups containing one or two open-class morphemes (cf. Brown 1973:54). A single utterance sometimes consists of several tone groups without a turn-taking pause in between, so that more than two constituents of the adult version may be included in a single utterance. In the examples, the end of a tone group is represented by a period or a question mark, while the end of an utterance coincides with the end of a line.

Brown 1973, in analyzing Adam, Eve and Sarah's acquisition of dative and other constructions, argues that children's early production indicates the existence of the underlying fixed order agent-action-dative-object-locative. Brown bases this conclusion on the fact that, when his subjects used only some of the constituents of the adult version, they always used them in the correct order, e.g. agent-object, action-locative, action-object etc. This is not true of F, who frequently produces utterances whose constituents are out of order with respect to the adult version. The data from F suggest the existence not of a single fixed-order main verb paradigm but rather of several competing underlying patterns, or perhaps a single pattern allowing flexible word order for its constituents. A fixed-order pattern like the adult version (or the children's version in Brown 1973) seems to be a rather late development in F's acquisition.

Without fixed order, it is possible to arrange any two of four given constituents twelve different ways. As Table 1 illustrates, only four permutations and combinations actually occur in the corpus, suggesting that F's production is not random but based on rules of some kind. If we assume that her basic syntactic structure has the order Salient element/Topic-Comment, as appears to be the case, it is interesting to examine which elements of the adult version she includes in her constructions and in which order. In column one, I indicate which elements of the adult version F selected. In column three, I assume an adult version of four major constituents, with the fixed order S V IO O or S V O PREP IO. If the elements selected in column one follow the fixed 'adult' order (with gaps for missing constituents), a *yes* appears in column three. Column four gives the sentence type and the person and number of the subject. In the last column, the verb used by F is followed by the verb that would be used in the adult version, if it is different from F's verb.

² The following abbreviations are used in the text:

S	subject	COM	comitative
O	object	ADV	adverb
IO	indirect object	COMPL	complement
PREP	preposition	SG	singular
BEN	benefactive	MC	matrix clause
ADD	addressee	IMP	imperative
LOC	locative	DECL	declarative
CONJ	conjunction	INTERR	interrogative

Elements selected	Age at occurrence	Match adult order?	Sentence type (subject)	F's verb (adult verb)
VO	1;10.29*	Yes	IMP (2SG)	have-it (give)
OV	1;10.29*	No	IMP (2SG)	have-it (give)
O BEN	1;11.11 1;11.11	Yes	IMP (2SG) DECL (2SG/indef)	(give) (give)
BEN O	1;11.11 1;11.14	Yes	DECL (2SG/indef) INTERR (1SG)	(give) (give)

*Two tone groups, each containing one constituent.

TABLE 1: Three-argument constructions at Phase One.

To summarize, F's earliest attempts to describe three-argument events are characterized by flexible word order and the following selectional restraints: no subject; if a verb, then a fused verb-object; if an object and a benefactive, then no verb. In terms of F's Topic-Comment syntax, it can be seen that objects, benefactives and actions, but not subjects, are selected as salient.

It is my hypothesis that the acquisition of dative constructions does not differ from the acquisition of any other constructions at the same stage. The selection and order of constituents for three-argument constructions at Phase One should follow logically on the selection and order of constituents for one- and two-argument constructions at the same phase. In addition, the syntax employed for alternating verbs should not differ systematically from that employed for non-alternating verbs. Table 2 compares selectional restrictions and syntactic patterns for F's earliest three-argument constructions with her contemporary one- and two-argument constructions:

Number of arguments	Which arguments are selected?	Order of constituents
One	S (usually) V (always)	SV (almost always)
Two	S (rarely; phonologically underspecified when present) V (almost always) O (almost always)	Flexible
Three	S (never) V (sometimes) O (always) BEN (sometimes)	Flexible

TABLE 2: Characteristics of Phase One constructions.

Examples:

- (17) *Chair. Move.*
'I'm moving the chair.'
Adult syntactic structure: O. V.
AGE: 1;10.1

cf.

- (18) *Book. Have-it.*
for 'give me the book' or 'I give you the book'
Adult syntactic structure: O. V-it.³
AGE: 1;9.28

- (19) *Feed cat.*
Adult syntactic structure: V O.
AGE: 1;10.4

cf.

- (20) *Toy. Have-it. Truck.*
'Give me the truck' or 'I give you the truck'
Adult syntactic structure: O. V-it. O.
AGE: 1;10.10

To summarize Table 2:

- Subjects are nearly always present in one-argument constructions but are unexpressed or underexpressed (i.e. phonologically underspecified) in two- and three-argument constructions.
- Objects are nearly always fully expressed in two- and three-argument constructions.
- Verbs are present in all one-argument constructions but are sometimes lacking in two- and three-argument constructions.

-Three-argument constructions often include the benefactive, in contrast with Brown's observation (1973:204) that dative indirect objects have very low frequency in early attempts.

In short, while Phase One three-argument constructions differ considerably from one-argument constructions, they do not differ greatly from two-argument constructions. Moreover, when F includes a locative or other non-benefactive object of a preposition in a Phase One construction, she codes this argument exactly as she codes benefactive arguments. That is, she appears to treat all 'third' arguments in the same way, whether or not they dative in the adult version:

- (21) */xxx/ clown. Diaper.*
'(I'm putting a) diaper on the clown'
Adult syntactic structure: xxx LOC. O.
AGE: 1;8.27
- (22) *Bucket medicine?*
'Can I give Bucket some medicine?'
Adult syntactic structure: BEN PREP or S O.⁴
AGE: 1;10.14
- (23) *Doll. Bed.*
'The doll is in bed.'
Adult syntactic structure: S. LOC.
AGE: 1;8.15

³ I regard the fused forms *have-it* and *give-it* as verbs alone rather than as verbs plus objects. My evidence is threefold. First, at Phase One, F never uses either *have* or *give* without the fused *it*. Second, she sometimes uses a full NP object in the same utterance as one of the fused forms (cf. example 20), suggesting that *-it* has neither a grammatical nor a semantic role. Third, when the fused forms disappear from her production, they do so completely and simultaneously, suggesting a sudden realization on F's part that *it* is not, in fact, part of the verb.

⁴ Here the adult version may actually have been something like *Can Bucket have some medicine?*, in which case the example does not qualify as a three-argument construction.

- (24) *Cart. Baby cart.*
 'There's a baby in the cart.'
 Adult syntactic structure: LOC. S LOC.
 AGE: 1;8.15
- (25) Mother (holding doll): *Sometimes you give the baby a bite-toy (teether).*
 F: *Bite-toy baby. Baby bite-toy.*
 '(You/I give) the baby a bite-toy.'
 Adult syntactic structure: O BEN. BEN O.
 AGE: 1;10.11

4.2. THREE-ARGUMENT CONSTRUCTIONS AT PHASE TWO. Phase Two begins with F's first use of a three-constituent utterance whose adult version has four major constituents. The following types of utterances occur in the corpus:

Elements selected	Age at occurrence	Match adult order?	Sentence type (subject)	F's verb (adult verb)
O ADD V	1;10.11	No	INTERR (1SG)	show
O V ADD	1;10.11	No	INTERR (1SG)	show
BEN S O	1;10.19	No	DECL (3pl)	(give)
BEN S V	1;10.19	No	DECL (3pl)	give-us
S O BEN	1;10.21	Yes, but PREP is lacking	DECL (3SG)	(give)
V BEN O	1;11.3	Yes	IMP (2SG)	give-it
BEN O V	1;11.3	No	DECL (1SG)	give-it
S V BEN	1;11.13 2;0.0 2;0.11	Yes	DECL (3SG) INTERR (Who) DECL (3SG)	give-it give-it give-it

TABLE 3. Three-argument constructions at Phase Two.

At Phase Two, all of F's dative constructions contain an indirect object unmarked by preposition. Of a total of ten utterances having a potential dative argument, BEN/ADD was accompanied in six cases by O, in six cases by S, and in eight cases by V. It may be recalled that at Phase One the actual combinations were limited to O/BEN and O/V; therefore, the significant selectional changes from Phase One to Phase Two are the apparently obligatory inclusion of BEN/ADD and the sporadic inclusion of S.

The constituents S and V (when V is not *be* or *have*) nearly always appear in contemporary two-argument constructions, e.g.:

- (26) *Okee bump me.*
 for 'Okee bumped me.'
 AGE: 1;10.11
- (27) *Lucas goggles.*
 'Lucas has goggles.'
 AGE: 1;10.11

- (28) *I read books.*
 for 'I am reading books.'
 AGE: 1;10.14

The frequent absence of S and V from Phase Two three-argument constructions does not, in itself, point to a difference between the acquisition of the dative structure and the acquisition of other structures. Since F is working with an apparent upper boundary of three morphemes per tone unit, she must choose among the four adult-version constituents in a way that makes sense in context and allows her to express the information that she regards as most important. With a two-argument constituent she need not be so selective, since all the potential constituents can be accommodated in a single tone unit. Her selection restraints with three-argument constructions thus may be due to a combination of language-wide constraints and pragmatic considerations.

In comparison with Phase One utterances, the order of constituents in Phase Two utterances is closer to the adult version. In half the cases, the order of the elements selected matches the order of the adult version; in all but one of these instances, adjacent elements are selected. In the remaining instances, BEN/ADD, O, or both are placed before the verb.

At Phase Two, as at Phase One, F uses the same range of means to code dative arguments that she uses to code non-dative third arguments, such as locatives. The data suggest that all non-subject arguments have the same status in F's grammar; i.e., all pose the problem of how to add an 'extra' argument to a one- or two-argument construction. The following examples show that F solutions to this problem are not governed by whether or not the extra argument may dativize:

Non-dative arguments:

- (29) *I stand chair.*
 'I'm standing on the chair.'
 Adult syntactic structure: S V LOC.
 AGE: 1;10.14
- (30) *Bite toy fall bed.*
 'The bite toy fell on the bed.'
 Adult syntactic structure: S V LOC.
 AGE: 1;10.17
- (31) *Medicine duck?*
 '(Where's the) medicine for the duck?'
 Adult syntactic structure: O BEN.
 AGE: 1;10.13
- (32) */xxx/ bag, banana?*
 '(I want to put the) banana (in the) bag, okay?'
 Adult syntactic structure: xxx LOC O.
 AGE: 1;11.28
- (33) *I read Daddy.*
 'Daddy read to me.'
 Adult syntactic structure: ADD V S.
 AGE: 1;10.16

Dative arguments:

- (34) *Woman give-it F.*
 'A woman gave it to me.'
 Adult syntactic structure: S V BEN.
 AGE: 1;11.13
- (35) *Bite-toy baby.*
 '(Give a) bite-toy to the baby.'
 Adult syntactic structure: O BEN.
 AGE: 1;10.11

- (36) *Woman hide tree.*
 'The woman is hiding behind the tree.'
 Adult syntactic structure: S V LOC.
 AGE: 1;10.16
- (37) *Baby bite-toy.*
 '(Give the) baby a bite-toy.'
 Adult syntactic structure: BEN O.
 AGE: 1;10.11
- (38) */xxx/ give-it F?*
 'Who gave that to me?'
 Adult syntactic structure: S V BEN.
 AGE: 2;0.0
- (39) *Mommy stroller give-it.*
 'Give the stroller to Mommy.'
 Adult syntactic structure: BEN O V-it.
 AGE: 1;11.3

At Phase Two, the two alternating verbs in F's vocabulary are *give* and *show*. While structures using *give* are much closer to the adult version than they were at Phase One, structures using the new verb *show* are unique in the corpus and are far from the adult version in terms of both order and constituent adjacency:

- (40) */darsn/ (dinosaur) Poppies show?*
 '(May I) show the dinosaur to the Poppies?'
 Adult syntactic structure: O ADD V.
 AGE: 1;10.14
- (41) *More lions show Poppies?*
 '(May I also) show the lion to the Poppies?'
 Adult syntactic structure: O V ADD.
 AGE: 1;10.14

It seems that F at this phase is not able to apply what she has learned about coding the arguments of *give* to the newly acquired verb *show*. Examples 40 and 41 suggest that she is starting from scratch in her attempts to code the arguments of the new verb, a fact that argues against the existence in her grammar of a semantically defined class of dativizable verbs (cf. Gropen et al. 1989, Goldberg 1991).

4.3. THREE-ARGUMENT CONSTRUCTIONS AT PHASE THREE. Phase Three begins with F's first use of a four-constituent utterance for a dative construction. About two weeks later, F introduces a preposition into a three-argument utterance. Table 4 shows the actually occurring permutations and combinations of the four constituents S, V, O and BEN, and prepositions (P) as they occur. Two- and three-constituent versions of dative constructions continue to occur, both as complements of a matrix clause (MC), such as 'I want', and (rarely, now) as simple sentences.

Elements selected	Age at occurrence	Match adult order?	Sentence type (subject)	F's verb
(MC) V O	1;11.29 2;0.17	Yes	Complement Complement	give-it give-it
(MC) V BEN/ADD O	1;11.29 1;11.29 2;0.14 2;1.8 2;1.16 2;3.17 2;3.25	Yes	Complement Complement Complement Complement Complement Complement Complement	give-it give-it give-it show show show give
S V BEN/ADD O	2;0.6 2;0.16 2;0.18 2;1.14 2;2.11 2;2.18 2;2.19 2;3.5 2;3.17	Yes	DECL (3SG) DECL (1SG) DECL (3SG) DECL (3SG) DECL (3SG) DECL (3SG) DECL (3SG) DECL (3SG) DECL (3SG)	made give-it got teach tell say* give tell teach
S V P(to) BEN O S S V O BEN	2;0.17 2;0.21 2;2.17	order transposed Yes	DECL (3SG) DECL (3SG) DECL (3SG)	give-it give give
S BEN V O	2;0.30	No	DECL (3SG)	give
BEN V O S	2;0.30	No	DECL (1SG)	give-it
(MC) V O P(to) BEN	2;1.18	Yes	Complement	give
(MC) V O P(*for) BEN	2;1.18 2;3.4 2;3.14	Yes	Complement Complement Complement	give buy give
V P(for) BEN	2;1.22	Yes	DECL (1SG)	'horning'
V O P(*for) ADD	2;1.27	Yes	DECL (1SG)	read
NEG V BEN O	2;2.9	Yes	IMP (2SG)	give
V O P(for) BEN	2;2.11 2;2.13	Yes	DECL (1SG) IMP (2SG)	draw make
S V O P(*for) BEN	2;3.13	Yes	DECL (3SG)	give
V O P(to) BEN	2;3.18	Yes	DECL (3pl)	give

*Though *say* does not dativize in the adult version, I class it as a three-argument verb because of the syntactic structure F uses here.

TABLE 4. Three-argument constructions at Phase Three.

Phase Three is characterized by the presence, in 29 of 34 dative-like utterances, of all constituents obligatory in the adult version, with the exception of prepositions. Missing constituents are as follows: One attempt early in Phase Three lacked a benefactive argument but was immediately corrected. First-person subjects were omitted on two occasions and a third-person subject on one occasion. One utterance lacking a first-person subject and object contained the neologism *horning*, which incorporates the object *horn* with the verb *blow*. One utterance apparently lacking a subject and benefactive might be construed as substituting the semantically appropriate *give* for the syntactically appropriate *for*, which F had not yet acquired:

- (42) *Thank you give-it chocolate milk.*
 'Thank you for giving me the chocolate milk'
 or 'Thank you for the chocolate milk.'
 AGE: 2;0.17

One exchange early in Phase Three (2;0.6) seems to indicate that F has grasped that the form S V O PREP BEN can alternate with the form S V BEN O:

- (43) Mother (pointing at mobile): *Uncle Barry made that for you.*
 F (pointing at mobile): *Uncle Barry made F that.*
 AGE: 2;0.6

This looks a lot like Gropen et al. 1989's proposed dative linking rule in operation, but it does not provide evidence for the assertion that the dative alternation is motivated by and accompanied by a shift in semantics as a function of a lexico-semantic rule. In fact, the preceding exchange argues against the existence of such a rule, since both forms of the alternation are employed in exactly the same situation in the same time frame and with the same participants. It is true that the benefactive is coded in the first utterance as a second-person pronoun and in the second as a proper name, but there is no evidence elsewhere in the corpus that F favors postverbal position when she herself is the benefactive. Counterexamples abound, e.g.:

- (44) *Gakki give-it F.*
 'Gakki gave that to me.'
 AGE: 2;0.11
- (45) *Boy give some candy F.*
 'The boy gave me some candy.'
 AGE: 2;2.17
- (46) *Make some coffee for me.*
 AGE: 2;2.13

What 43 does demonstrate is that F realizes that the benefactive of *make* can appear in one of two places in the sentence and that the immediate postverbal slot does not call for a preposition.

Is this realization limited to *make*, or to the semantic field of verbs of creation, or to all dative verbs, or to three-argument verbs beyond those to which adults apply the dative alternation? Unfortunately, few examples in the corpus are as neat as 43, and a comparison of syntactic structure against verb (Table 5) does not seem to resolve the question:

Verb	Dative construction	Prepositional construction
give	S/MC V BEN O	S V O P(to, *for) BEN
make	S V BEN O	S V O P(for) BEN
show	MC V ADD O	
get	S V BEN O	
buy	S V BEN O	
teach	S V ADD O	
read		S V O(*for) ADD
draw		S V O P(for) BEN
tell, *say	S V ADD O	

TABLE 5. Verbs and the structures in which they occur.

What is interesting about Table 5 is that, despite F's apparent 'mastery' of the dative alternation, the only verbs for which she actually uses both syntactic forms are *make* and *give*. Several explanations are possible. It may be that, because *give* is F's oldest dative verb, she is more adventuresome in coding its arguments, but this does not explain her competence in coding the arguments of the more recently acquired *make* or her failure to alternate structures using the relatively 'old' verb *show*. If *give* is, as Goldberg 1991 claims, the central member of a metaphorically connected set of alternating verbs, the data suggest that F has not yet learned the existence or nature of the semantic and metaphorical links within the category; therefore, her alternation with *make* cannot be based on a metaphorical link with *give*. It may be that the frequency of F's use of *give* reflects the frequency of *give* in the linguistic input around her; if so, her greater confidence in coding the arguments of *give* is consistent with the language acquisition model discussed in §4, but her confidence with *make* remains unexplained. It may be that F's failure to alternate structures for verbs like *show* and *tell* demonstrates that she has not yet developed the event-based complex semantic structure that will eventually allow her to apply the lexico-semantic and linking rules posited by Gropen et al. 1989. Or, it may be that F has developed an idiosyncratic rule for *make* that places a full NP argument in the postverbal slot while allowing a pronominal argument to be coded as object of a preposition.

The data are consistent with the following explanation, which demands neither the development of a complex semantic structure nor an independent understanding of the semantic functions coded by the alternating syntactic forms. F's relatively greater competence in coding the three arguments of *give* is linked with the number of attempts she has made to produce utterances with *give*, which may in turn be linked with the relative frequency of *give* in her linguistic environment. Each occurrence in her input adds a layer to her understanding of how to structure a *give* sentence; each of her own attempts to structure such a sentence is an exemplar to compare against her increasingly sophisticated understanding of the adult version. The single recorded alternation with *make* may be an attempt to extend this understanding to another three-argument verb which shares some semantic features with 'give' or it may be directly related to occurrences of *make* in her input. In either case, it may be weeks or months before she really knows whether this foray is correct.

As in Phases One and Two, contemporary data from Phase Three show that F is still experimenting with argument coding not only for three-argument verbs but for one- and two-argument verbs and non-dative third arguments. This experimentation resembles her experimentation with dative three-argument verbs in several important ways: Word order of major constituents remains somewhat flexible; major constituents are still occasionally omitted, though less frequently than at earlier stages; and prepositions are used only sporadically. Examples:

- (47) *I wear arms. Bag.*
 'I'm wearing the bag on my arms.'
 Adult syntactic structure: S V LOC. O.
 AGE: 1;10.30

- (48) *Joey got F toy. That one.*
 Adult syntactic structure: S V BEN O. O.
 AGE: 2;0.18
- (49) */aimn/ make something cereal cook.*
 'I'm going to cook some cereal.'
 Adult syntactic structure: xxx V O O V.
 AGE: 2;0.5
- (50) F: *Jack kick ball.*⁵
 Adult syntactic structure: S V O.
 Mother: *Jack kicked the ball?*
 F: *Dorian kick.*
 Adult syntactic structure: O V.
 Mother: *Dorian kicked the ball?*
 F: *No, Jack kick.*
 Adult syntactic structure: S V.
 Mother: *Jack kicked Dorian?*
 F: (nods)
 AGE: 2;0.6
- (51) *Drive office and crackers eat.*
 '(We're going to) drive (to the) office and eat crackers.'
 Adult syntactic structure: V. LOC CONJ O V.
 AGE: 2;0.14
- (52) *Cake eat last day. 'Member cake?*
 'We ate cake yesterday. Remember the cake?'
 Adult syntactic structure: O V ADV V O?
 AGE: 2;0.18
- (53) */āwā/ Barbie wash.*
 'I want to wash Barbie.'
 Adult syntactic structure: MC O V.
 AGE: 2;0.23
- (54) *My egg swimming me?*
 '(Can) my egg (go) swimming (with) me?'
 Adult syntactic structure: S V COM?
 AGE: 2;1.4
- (55) */pozbi/ go in there toy in slot.*
 'The toy is supposed to go there in the slot.'
 Adult syntactic structure: S V_{MAIN} V_{COMPL} Adv S PREP LOC.⁶
 AGE: 2;1.24

F overgeneralizes the dative form to verbs, such as *say*, that adults do not dativeize but that share some semantic features with 'true' dativeizing verbs. This is consistent with predictions made in Gropen et al. 1989:

⁵ Menn (p.c.) suggests this may be a speech error, an instance of substituting the syntagmatically high-probability object *ball* for the low-probability object *Dorian*. Frajzyngier (p.c.) observes that the whole exchange is evidence that F understands the meaning of the structure N V N as coding agent-verb-patient but is not yet able to use the structure correctly.

⁶ I have chosen a single-clause paraphrase, in spite of the odd syntactic structure, on the grounds that the original utterance was clearly a single tone group and that F uses */pozbi/ go in there* as a fixed phrase in other contemporary utterances.

- (56) *I say Dui 'hutfka'.*
 'I said 'hutfka' to Dui.'
 AGE: 2;2.18

cf.

- (57) *Margaret tell me baby will come again.*
 'Margaret told me the baby will come soon.'
 AGE: 2;2.1

There are several possible accounts for overgeneralization like that found in 56 and 57. Gropen et al. 1989 argues that verbs of 'proposition or propositional attitudes' like *say* do not dativize in adult language because they describe an action entirely in terms of the speaker's behavior, while dativizing 'illocutionary-message' verbs like *tell* and *show* imply an expected reaction on the part of the listener or viewer and therefore fall into the broad dativizing semantic category of *cause Z to have Y*. In this view, structures like 56 indicate either that the child has not yet acquired the semantic properties of *say* or that the child has not yet acquired all of the constraints on the dativizing rule and the subclasses of verbs to which it applies. Goldberg 1991 suggests that illocutionary-message verbs like *tell* and *show*, but not *say*, are 'licensed' to dativize according to the Conduit Metaphor (cf. Reddy 1979), by which linguistic messages are 'packaged' by the speaker and transmitted to the listener for 'unpacking'. From this, we may infer that the child who wrongly dativizes *say* either has not learned to exclude *say* from the subclass of conduit-metaphor verbs or has not learned that systematic metaphor is the basis for inclusion in the class of dativizing verbs.

Such attempts to discover the precise semantic links among the dativizing or alternating verbs miss the point. A child makes a mistake like 56 because she HAS learned the semantic properties responsible for dativizing. Ex. 56 shows neatly that she understands the semantic link between *say* and *tell* as well as the semantic roles encoded in the dative structure. Eliminating forms like 56 is not a matter of learning more semantic distinctions but rather of acquiring those conventions and constraints that are NOT predictable from semantics.

In Phase Three as in earlier phases, F's patterns of experimentation with prepositional third arguments are analogous with her experiments with three-argument verbs. Early in Phase Three she begins to use prepositions sporadically to code locatives, recipients, benefactives and instrumentals, e.g.:

- (58) *Aunt Anne give-it to...Aunt Anne give-it to F coat.*
 'Aunt Anne gave me the coat.'
 AGE: 2;0.17
- (59) *I want to give this for the dog. Give it to Okee.*
 AGE: 2;1.18
- (60) *Reading a book for Dui.*
 'I'm reading a book to Dui.'
 AGE: 2;1.27
- (61) *Matthew give it for me.*
 'Matthew gave it to me.'
 AGE: 2;3.13
- (62) *Make some coffee for me.*
 AGE: 2;2.13

While the prepositions she chooses are not always the ones that adults would choose, they do reveal a growing sense of the meanings conveyed by the prepositions. For example, 59-61 suggest that F knows that *for* codes the semantic function of benefactive. What she has not yet learned is the English convention of coding the benefactive/recipient of *give* and *read* with *to* rather than *for*. Still, there is little to suggest a distinct track of acquisition for dative verbs. Her experiments with these verbs closely resemble her experiments with other prepositions and one- or two-argument verbs:

- (63) *I'm gonna save this to later.*
AGE: 2;3.21
- (64) *I goin' on a airplane, up on the sky.*
AGE: 2;2.18
- (65) *I need my cars to bed.*
AGE: 2;3.13
- (66) *Carry this at the car!*
AGE: 2;3.2

At 2;2.14, F suddenly seems to demonstrate a grasp of the difference between *for* and *of*, as well as the possibility of alternating syntactic structures with the verb *draw*:

- (67) F: *Drawin' a picture for Dui.*
Mother: *A picture of Dui?*
F: *Drawin' Dui picture.*
Mother: *Drawing Dui's picture?*
F: *Not of Dui. For Dui.*
Mother: *Oh, you're drawing a picture for Dui.*
F: *Yes.*
AGE: 2;2.14

In spite of this discovery, F continues to misuse *of* and *for* with other verbs, though not with *draw*. About two weeks after producing 67, F begins to overextend *for* to code arguments that are semantically benefactive but that are not usually part of the adult version, again indicating that she has mastered the benefactive meaning of *for* but not the conventions of its usage:

- (68) *I put my chocolate on my towel for me.*
AGE: 2;2.19
- (69) *I wanna buy some good things for me at the toy store.*
AGE: 2;3.4

She also extends *for* to non-benefactive situations calling for a different preposition entirely:

- (70) *Ridin' for ('on') my car.*
AGE: 2;2.5
- (71) *Buildin' a tower for ('out of') my dolls.*
AGE: 2;2.6
- (72) *I want something for ('to') eat.*
AGE: 2;2.17
- (73) *Going for ('to') Mommy's brother's house?*
AGE: 2;1.24

F's experimentation with *for* and other prepositions is analogous to her experimentation with the two possible three-argument structures in several ways: A period of experimentation characterized by the production of some right and some wrong forms is followed by an instance which seems to demonstrate a kind of mastery of the function of the forms, or at least a sense of confidence in producing the forms (cf. 43 and 67); the pattern of experimentation resembles contemporary patterns of experimentation with other like constituents; and the newly acquired form is overgeneralized to wrong environments. There is no reason to attribute to the dative alternation a special status as an alternation, since both right and wrong dative structures have analogues throughout the contemporary data.

5. CONCLUSIONS. I have shown that F's attempts to produce three-argument constructions reflect her general patterns of experimenting with language, which in turn reflect general patterns of English, which in turn are shaped by English word order and the fact that prepositions are used to add arguments to a clause or to code arguments that occur elsewhere than in their unmarked position. I have shown that F's early attempts to produce three-argument constructions fail to reveal an underlying fixed-order constituent pattern like that proposed in Brown 1973. These facts suggest that F's early grammar does not use word order to code grammatical relations, but seems instead to rely on a contrast between topic and comment or salient vs. background.

At about age 2, F begins to produce sentences in which all three arguments of a three-argument verb are present. She also begins to use the prepositions *to* and *for*. She is thus able to use all of the elements involved in both the prepositional three-argument construction and the double-object construction. She indeed produces both types of constructions. However, with the exception of the high-frequency verb *give*, she does not produce the double-object construction and the prepositional construction for the same verb at the same time. It appears that she acquires each new three-argument verb with either the prepositional construction or the double-object construction, but not both. There is no evidence that she acquires with the verb any notion that it 'alternates', hence no need to posit the acquisition of a special dativizing rule that operates on the prepositional construction to produce the double-object construction. The child language data fail to support recent hypotheses that assume that the dative and prepositional constructions are acquired and employed as a pair of constructions (cf. Kayne 1984, Gropen et al. 1989, Goldberg 1991 and Larson 1988) rather than as two separate, though related, syntactic forms.

Of course, absence of evidence is not the same as evidence of absence. The fact that I can account for my data without positing a dative rule does not mean that there is no dative rule. Just because the child exhibits no dative rule does not mean that this rule does not exist in adult language. Furthermore, F's constructions throughout the period under investigation make it clear that her grammar is quite different from adult grammar. Why bother, then, to examine the dative alternation using child language data?

My reasons are twofold. First, there are researchers (e.g. Gropen et al. 1989 and, to a lesser extent, Hudson 1992) who invoke child language as direct evidence for hypotheses concerning adult language. My data, which show that child grammar may be quite different from adult grammar, suggest that using child language as direct evidence for the presence of adult syntactic rules is risky. On the other hand, child language does provide a window on the broad rules that underlie adult grammar, rules that over time become constrained and sometimes almost obscured by convention. If a rule 'works', in that it enables the child to use language to get what she wants, there is no reason to assume that the rule is discarded, though it may be greatly modified. To understand the rules that the child induces from the sea of language around her is to understand the skeleton of what will become her adult grammar. This grammar may never be identical at all points with the grammar of any other native speaker, for, as Hudson points out (1992:269), the fact that native speakers disagree as to the grammaticality of various constructions suggests that adult speakers of the same language in fact have different grammars. However, an analysis of overgeneralization and other error patterns in child language can reveal core functions of adult grammatical devices and may even cast new light on the study of grammaticalization, since what is overgeneralization in one language may be correct usage in a language that has followed a different path of grammaticalization.

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