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Linguistic and Extralinguistic Factors
in the Interpretation of Children's
Early Utterances

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Abstract

Bestimmte seit den sechziger Jahren zur Analyse früher kindlicher Äußerungen benutzte Beschreibungsmodelle unterschätzen die sprachliche Kompetenz des Kindes, indem sie die Struktur seiner Äußerungen auf Distributionsphänomene der Oberflächenstruktur reduzieren, andere Modelle überschätzen diese Kompetenz, indem sie kindlichen Äußerungen mehr sprachliche Information zuschreiben, als sie enthalten. Wenn außersprachliche Information auf systematische Art und Weise in die Untersuchung der sprachlichen Kommunikation zwischen Kind und Erwachsenen einbezogen wird, findet einerseits die Tatsache eine Erklärung, daß diese Kommunikation in so erstaunlichem Maße erfolgreich ist, andererseits erlaubt diese Beschreibungsweise es aber, frühe kindliche Äußerungen als sprachlich so undeterminiert darzustellen, wie sie sind.

The main condition for two persons to achieve linguistic communication between themselves is that they share equivalent linguistic codes, i.e., that they dispose of equivalent rules for coding messages into sound waves. This condition is usually not fully met in the linguistic communication between adult and child.

Consider the utterances (1) and (2) made by a twenty-two-month-old Greek girl.

(1) nat kotóso!

(2) pípo tóla!

Janna uttered (1) on seeing a fly in the room and (2) when she heard the other children go out into the garden outside the kindergarden building. A Greek-speaking adult who knew the circumstances under which the two utterances were made, would relate them to the adult sentences (3) and (4) respectively.

(3) na tin skotóso!

'I am going to kill
it!'

(4) Θέλο na páo ston kípo tóra!

'I'd like to go into
the garden now!'

Although children's utterances are rather different from adult ones, they are nonetheless relatable in certain systematic ways to adult utterances. Thus, on the phonological level, pipo is explainable as obtained from kipo by regressive assimilation of the first consonant. The fact that correspondence rules can be established between child and adult utterances shows that the child's utterances follow rules, that they are systematic and not random.

Since the early 1960's analysts of child language have stressed its systematic nature and even its autonomy from the system of adult language. The child is seen as a "fluent speaker of an exotic language" (McNeill 1966:16). This position can be explained in its historical context as a reaction against behavioristic language acquisition theories, which would account for the acquisition of language wholly in terms of such notions as imitation and reinforcement.

Braine (1963) was the first to describe the language of three English-speaking children generatively. Analyzing from 80 to 100 two-word utterances of each child, he found that a certain class of words with relatively few members occurred only in sentence-initial position, whereas another class of words, equally small, occurred only in sentence-final position. He called these word-classes PIVOT₁ and PIVOT₂ respectively. Examples for P₁-words are the initial words of the sentences in (5), whereas the sentences in (6) end in P₂-words.

- | | |
|-------------|-----------|
| (5) see boy | (6) do it |
| see hot | push it |
| no bed | boot off |
| no fix | sock off |

Braine thus established two major word-classes for early child language on the basis of distributional evidence: PIVOT and X or OPEN class. The pivots are a small group of words with fixed sentence position, whereas the open class comprises many members which freely occupy sentence-initial or sentence-final

position and which also frequently form one-word utterances such as boot, push, etc. Braine's description of the three children's two- and one-word utterances can be formalized as follows:

$$\begin{aligned} (7) \quad S &\rightarrow P_1 + O \\ S &\rightarrow O + P_2 \\ S &\rightarrow O \end{aligned}$$

This type of grammar has since been known by the name of PIVOT GRAMMAR. It is meant to be a generative one, i.e., it claims to account not only for the utterances actually observed but also to make predictions about possible sentences.

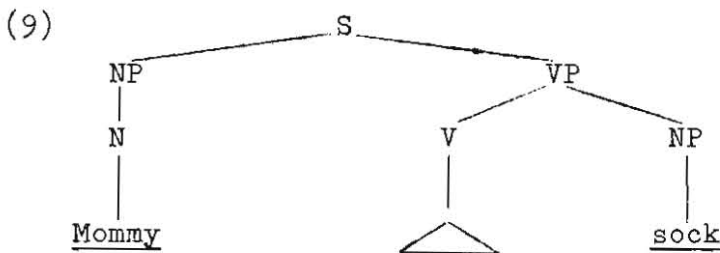
Braine's major claim, namely that children's utterances are productive and hence rule-governed has been implied in most subsequent analyses of child language.¹ Braine's other claim, however, that the only thing children know about sentence structure are positional relations and that their word classes are mere distributional classes has been shown to be empirically inadequate.

McNeill, in his theoretical paper on language acquisition "Developmental Psycholinguistics" (1966), argued that children must have more knowledge about sentence structure than pivot grammar attributes to them. His data of English two-word sentences - from one child only, by the way - yields three word-classes: Pivot, Noun, and Verb. These would logically allow $3^2 = 9$ two-word sentence types. McNeill found, however, that only four of the nine logically possible sentence types occurred and that the occurring word-class combinations were just those corresponding to four basic grammatical relations, namely:

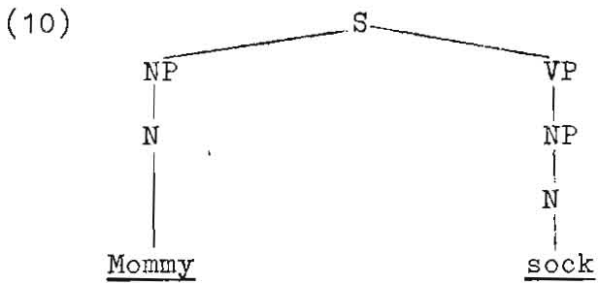
(8) grammatical relation	meaning	example
P, N	modification	<u>allgone milk</u>
N, N	modification or subject/verb	<u>Mommy sock</u>
V, N	verb/object	<u>change diaper</u>
N, V	subject/verb	<u>doggie go</u>

In order to account for the occurring as well as for the non-occurring utterances of the child, it is necessary to attribute to him more knowledge about sentence structure than just distributional classes. Pivot grammar thus underestimates the child's grammatical knowledge. As has been stated by Bloom (1971), it is furthermore unable to describe the meaning of children's utterances nor to explain the relation between cognitive and linguistic development.

To achieve a more complete description of child language, Bloom (1970) takes into account the situations in which the children's utterances are made and is thus able to attribute to the child certain linguistic intentions, giving what has been called by Brown (1973) a "rich interpretation" of children's early utterances. Following the grammatical model of generative transformational grammar developed by Chomsky (1965), Bloom defines the grammatical relations among the words of the sentence in the syntactic deep structure. Deep structures are transformed into surface structures by transformational rules. In the deep structure (9) of the sentence Mommy sock, which Kathryn uttered when Mommy was putting Kathryn's sock on Kathryn, the word Mommy functions as subject and the word sock as direct object.² Bloom sets up the nodes VP and V even though lexically the sentence does not have a verb, in order to determine the grammatical function of the word sock.



The deep structure is related to the surface structure (10) by an obligatory reduction transformation which deletes the verb.³ With this type of analysis, Bloom can account



on the one hand for the rich interpretation of children's utterances by postulating complex deep structures and on the other for the severe constraints on sentence length by making appeal to a reduction transformation. The question arises, however, whether this description is meant to reflect the child's linguistic competence or if it simply is a device for representing the relation of the adult's interpretation of the child's utterances to the surface structure of the child's utterances. Bloom makes it very clear that her description is intended to reflect the child's linguistic competence when she writes: "The notion of reduction is ... a grammatical process that attempts to explain the surface structure of children's sentences - rather than a notion that describes how children's sentences differ from the adult model" (1970:147). Brown (1973:106) characterizes Bloom's view of child speech as "the parental rather than the behavioristic one ... The child at Stage I intends his multi-word utterances to express meanings something like those which expanding adults attribute to him." There can be no doubt that there do exist relations between the words of two- and three-word sentences. Otherwise, neither regularities of word-order nor the fact that certain utterances do not occur could be explained. The problem with Bloom's analysis is, however, that the deep structures she attributes to the child's sentences are, at least as far as the major categories are concerned, very nearly identical to the deep structures one would attribute to the adult sentences obtained by expanding the child's sentences. Thus, in contrast to Pivot Grammar, which underinterprets children's utterances, Bloom's analysis overinterprets them, i.e.,

Bloom attributes more linguistic specificity to them than they actually have. As I will show below, this is due to a confusion between the linguistic content of child speech and other factors intervening in the interpretation of child speech by the adult.

After Bloom, Schlesinger (1972), Schaerlaekens (1973), Bowerman (1973), and Brown (1973) continued with this rich interpretation of children's utterances, but their descriptive models are semantically based. Some of the semantic relations which seem to be universally expressed by young children in two-word utterances are:

(11) Agent - Action	<u>Mommy fix</u>
Agent - Object	<u>Mommy pumpkin (is cutting a)</u>
Agent - Locative	<u>Baby table (is eating at a)</u>
Action - Dative	<u>Give doggie (you, it, to)</u>
Action - Object	<u>Hit ball (I)</u>
Action - Locative	<u>Put floor (I, it)</u>

(after Brown 1973:205)

None of these examples is a complete grammatical sentence from the adult point of view. Bloom accounted for this by postulating an obligatory reduction transformation. Should this transformation have psychological reality, however, it would make earlier utterances more complex from a grammatical point of view than later utterances like I hit ball which do not undergo reduction. Brown (1973) avoids this difficulty by setting up categorically rich deep structures in which any category is optional lexically. Although the highly elliptic character of child speech can thus be accounted for, Brown perhaps goes too far; it is quite possible that there do exist restrictions for the omissibility of constituents in child speech. These may very well be extralinguistic, i.e., governed by communicative rules (cf. p.15f. below). Brown is right in stating that a major part of language acquisition involves "learning to express always, whether redundant or not, certain forms: subject

[at least as far as such languages as English and German are concerned], verb, and object, of course, but also number, tense ..., etc. Eventually, the child learns to omit forms, only where adults do so" (1973:241).

How can it then be explained that, highly elliptic as their utterances are, young children communicate so surprisingly well with the adults in their immediate environment? If you observe the interaction between a child and his mother, situations in which the mother does not react appropriately to the child's utterance are very rare indeed. Although young children use certain strategies of repetition and expansion of their utterances in the case of communication difficulties (cf. Stephany 1973), linguistic factors do not suffice to explain the fact that the adult is able to understand the child's utterances.

The main point I want to make in this paper is that comprehending a linguistic utterance presupposes more than knowledge of the particular linguistic code the speaker is using and that, under certain conditions, communication can succeed quite well even if the linguistic code the speaker employs is only partly known to the hearer and/or its use is quite fragmentary as far as the speaker is concerned.

Let us return to one of the Greek utterances mentioned in the introduction and first consider its linguistic information. The utterance pípo tóla consists of two words. The single intonation contour marks this two-word sequence as one utterance. The intonation is that of a full sentence, just like the intonation of the adult two-word sentence pijéno tóra ('I go now'). The lexical content, however, is not that of a full adult sentence: there is a word pípo corresponding to the adult noun kípo ('garden') and a word tóla corresponding to the adult temporal adverb tóra ('now'). But there is no verb expressed and there is therefore no

syntactic indication of the function the noun may have. To see this, consider a hypothetical (ungrammatical) sentence such as páo kípō ('I go garden'). Because of the form of the verb, kípō cannot be used as the subject. But even in the case of the verbless sentence pípō tóla ('garden now') there is some linguistic information as to the probable function of the noun pípō. This is not indicated by its suffix -o, however. The child in question did not yet express different nominal functions by different endings. Thus, she would say babá ('Daddy') as well for the nominative as for the accusative.⁴ Neither did she consistently signal the difference between singular and plural by noun endings. The linguistic information implicit in the noun pípō is semantic. The noun kípō belongs to the class of inanimate concrete nouns and its referential meaning may roughly be described as 'a relatively small site planted with trees and arranged by man usually situated near human dwellings'. This semantic characterization of the noun kípō narrows down the number of functions it may have in the sentence. According to Fillmore (1968), inanimate nouns do not qualify for the function of AGENT. Compare the semantically anomalous sentences o kípōs xálase ta dendra tu ('the garden destroyed its trees'). Nouns referring to places characteristically have locative function, at least in child language, as in to pedí pézi ston kípō ('the child plays in the garden'), although they may have other functions as well, at least in adult language. Compare o kípōs vrískete stin aθína ('the garden is situated in Athens'), where kípōs ('garden') would be attributed the semantic function OBJECT.

To summarize, the linguistic information signalled by the utterance pípō tóla ('garden now') - rules of phonological correspondence taken for granted - is as follows: (1) The word sequence pípō tóla functions as one sentence. Its status as one sentence is marked by the intonation contour. (2) The sentence pípō tóla consists of the words

pípo and tóla in that order. (3) pípo belongs to the subclass of inanimate, concrete, countable nouns referring to a certain class of places. (4) Possible semantic functions of the noun pípo are LOCATIVE, PATIENT, and others, but not AGENT; LOCATIVE being the most likely of these. (5) pípo is possibly singular because of the ending -o. (6) The deictic temporal adverb tóla indicates that the utterance pertains to the time of the utterance or to the near future relative to the time of the utterance. It must be added that pípo tóla or kípo tóra is not a possible Greek sentence, not even as an elliptic answer to a question.

Without knowledge of its extralinguistic context the utterance pípo tóla could neither be interpreted with any amount of certainty nor would it be uniformly expanded by different adults. Should it be expanded to ta pediá (i files mu, o pétros, ...) ine (páne, katevénun, pézun, ...) ston kípo tóra ('the children (my girl-friends, Peter, ...) are/is (go, go down, play, ...) in/into the garden now') or to some other full sentence? - The situation in which the utterance pípo tóla occurred was the following: One of the playing and recording sessions which the observer had with Janna in the kindergarden was coming to its end. Janna and the observer were alone in a room still playing, when the other children could be heard running out to have their daily playperiod in the garden surrounding the building. This was when Janna said pípo tóla. The observer's interview sessions with Janna usually ended when the other children were let out into the garden and she then led her out there to join her playmates. With this background information, the utterance pípo tóla can be interpreted as expressing Janna's wish to go out into the garden.

My concern here is with how it can be explained that, given the linguistically fragmentary nature of the utterance pípo tóla, different hearers having the necessary background information would interpret it in the same way.

All studies on child language which go beyond a mere distributional analysis⁵ expressly rely on extralinguistic context for the interpretation of child utterances. There is, however, usually no indication of how extralinguistic context is used for inferring interpretations of linguistic utterances. Given the diversity of situations in which humans communicate with each other, the chances of arriving at uniform interpretations of utterances by drawing on extralinguistic context in an ad hoc fashion would be very small. It is thus to be expected that reliance on extralinguistic context for the interpretation of linguistic utterances is rule-governed.

It must likewise be noted that hearing and understanding is by no means a passive affair. When trying to understand, the hearer makes certain conjectures about the probability of a message on the basis of what he knows about the speaker, about their preceding conversation, about the world. As Rubenstein (1973) puts it: "The listener is a predictor". And he is much more of a predictor when he is an adult listener communicating with a child than when communicating with another adult.

When communicating with an adult, a listener can rely on certain things, namely, that the speaker will give more or less complete grammatical information, that he will take into account what the listener knows and what he does not know and thus has to be told. But as Schnelle (1971) writes: "Considering all factors determining language communication, phonetic, syntactic, and semantic competence as well as relevant context of knowledge, experience etc., presupposed to exist in the partner, the adult drastically reduces his assumptions when communicating with a child." Schnelle was considering the adult speaking to the child, but his remarks are equally valid for the adult trying to understand the child. In order to understand the child, the adult must take into account the child's present perceptions and mani-

pulations as well as what he says. The predominant role context plays in children's utterances was already noticed by Grace de Laguna in 1927. In her study "Speech: Its function and development", she writes: "Just because the terms of the child's language are in themselves so indefinite, it is left to the particular context to determine the specific meaning for each occasion. In order to understand what the baby is saying, you must see what the baby is doing" (pp. 90-91).

Let us conclude these general remarks on the importance of context for linguistic communication by citing a "Gedankenexperiment" by Bar-Hillel (1970). The "Gedankenexperiment" posits a law forbidding the use of good will in communication. As a consequence, everything that somebody would like to say to somebody else would have to be spelled out completely. This makes it impossible to rely on context. One can easily imagine some of the consequences such a law would have for linguistic communication among mature speakers. As far as young children are concerned, it would mean that they could not communicate at all, because their utterances, far from spelling out everything, are even incomplete from an adult's point of view. In order to express the wish to go out into the garden in a situation like the aforementioned, an adult would not say "The speaker of the utterance, Mr. So-and-So, addressing himself to the hearer, wants him to know that it is his wish to leave the place where he is while making the utterance immediately after having made the utterance and go into the garden which is outside the door of the building the speaker and the hearer are both in at the time the utterance is made." Normally he would not even say "I would like you to know that I would like to go out into the garden (now)", but simply "I would like to go out into the garden (now)". The child, however, only said the equivalent of "garden now". Thus, although adult speech does not give full information on a given situation either, the child signals far less linguistically than what is permitted in the adult system.

We are now ready to study the adult's understanding of the utterance pípo tóla. On hearing this utterance, the adult's attention shifted to a garden and the actual time of the utterance or the time immediately following the utterance. Just before the utterance was made, the hearer had been concentrating on some toys lying on the table. The utterance made him turn his attention to something else, namely a garden. According to Olson (1972) "the normal consequence of hearing a sentence in a context is to alter the listener's perception of that context; language restructures the perceptions of the listener" (p.162).

How does the hearer in the example understand the child's referring to a specific garden, namely the one immediately outside the window? First of all, adults know that children's utterances either pertain to the immediate extralinguistic and/or linguistic context or to certain past events or to events expected in the near future. Olson (1972) calls this "the primary use of language for communication ... , a use which may be characterized as 'sentences as descriptions', the enterprise of mapping sentences on to reality" (p.144). He distinguishes this from a different and developmentally later usage of language, its use for reasoning which he characterizes as "'sentences as propositions', the enterprise of mapping sentences on to other sentences" (ibid.).

Being concerned with the interpretation of children's utterances by adult hearers, we shall set up rules of interpretation as hearers' strategies. These strategies are meant to reflect the ways in which extralinguistic information enters into the interpretation of linguistic utterances. Concerning the way children spontaneously use language, we can set up a first hearer's strategy (HS), namely

HS 1 Interpret a child's utterance, if possible, as referring to instances of the communication situation.

Applied to our example, this narrows down the number of hypotheses the hearer has to make in order to arrive at a proper interpretation of the utterance pípo tóla. Applying HS 1, the child will not be understood as referring to any possible garden, but to a garden which plays a role in the speech situation. As the child was not looking at a picture book showing a garden or something of the sort, the garden being in the immediate neighbourhood of the speaker and hearer qualified as a likely referent of the word pípo.⁶

The interpretability of a sentence depends on its syntactic completeness and on its relation to the context of the situation in which it is uttered. The less a sentence is syntactically complete, the more it must be tied to the communication situation in order to be interpretable. If several adults were asked to expand the utterance pípo tóla ('garden now') without being told about the situation in which the utterance was made, they could do this in a number of ways and they would certainly not all expand the utterance in the same way. Several possible expansions might be Greek equivalents of "Peter is playing in the garden now", "Let's go for a walk in the garden now", "I remember the garden now that you showed me this snapshot". The situation would be quite different for a syntactically complete sentence like θέλο να πάω στον κίπο τώρα ('I want to go into the garden now'), which, in the absence of context information, different mature speakers would all interpret as a speaker's statement of his wish to leave the place he is in for a certain garden.

Let us return to the child's utterance pípo tóla. How can it be explained that the hearer understands the noun pípo as a definite noun? In adult language, one of the uses of a definite noun is to refer to something the speaker can presuppose to be known by the hearer. As the garden referred to in the utterance pípo tóla fulfils this con-

dition under the above mentioned interpretation, an adult will expand the noun pípo to the definite noun phrase ton kípō or o kípōs ('the garden', Nom. or Acc.). We now see that the adult who is expanding the child's utterance starts from his interpretation of the child's utterance, that is to say, from what he takes to be the message intended by the child and encodes this much the way he would encode a message of his own, naturally observing the rules of his language.

How does the hearer understand the utterance pípo tóla as expressing a wish? Wishes may be marked prosodically by being produced at a relatively high pitch level. As we have not studied these matters we shall appeal to other kinds of information that can be adduced to determine the kind of speech act. How can it be explained that the adult does not understand the utterance pípo tóla as being the equivalent of the statement "the children are in the garden now", or the like? First of all, one has to know which kinds of communicative acts young children make. It seems to be universally the case that children express their feelings, such as hunger and pain, a wish to get something, to do something, a refusal of something, that they ask for information, describe a section of a situation that is in the focus of their attention, etc.⁷ Although all of these and related communicative acts will occur with all normally developing children, there will be differences as to the relative frequency of the different kinds of communicative acts having to do with the social position of the child and therefore probably also differences between cultures and social classes within a given culture. Sociolinguistic studies on very young children have only begun⁸ and we will therefore limit ourselves to consideration of the general role of the child in relation to the adult. It will most likely be the case in any culture that the child has restricted rights in his social environment. If this is so,

he will be obliged to appeal to those persons in his environment who enjoy full rights socially in order to fulfil many if not most of his desires. If this is true, it is likely that his spontaneous utterances directed toward a communication partner - i.e. those which are not routine reactions to certain linguistic stimuli given by the adult - for instance answers to standardized questions such as "Where is Daddy?" - "At work." - will to a high degree be made up of wishes or requests. A second hearer's strategy can thus be ventured:

HS 2 Interpret a child's utterance as expressing a wish or request for an extralinguistic reaction unless this is prevented by a feature of the utterance itself or by the communication situation.⁹

If we try HS 2 on the utterance pípo tóla, keeping in mind the information we already have, we get something like the following: the speaker expresses a wish or request concerning the garden outside the building. The temporal adverb tóla signals that the speaker wants his wish or request to be satisfied in the immediate future of the time of the utterance.

However, a request must obligatorily indicate to the hearer the thing, situation, etc. aimed at, in case this is not evident to him. As Olson (1972) states for mature speakers: "In a communication context, a speaker chooses words and expands his utterances to the point that is required to differentiate an object or event from the set of perceived or inferred alternatives. Thus, in the context of a black block, a large white block will be described as 'the white one', while in the context of a small white block, the same block will be described as 'the large one'" (p.139). Applied to our example, in the context of speaker and hearer being in a room playing and of children going out into the garden and being heard from within, it is essential

that the speaker makes it possible for the hearer to focus on the same element of the situation as he does himself. By uttering the word pípo in the above situation, the speaker makes the hearer focus his attention on the garden and not, for instance, on the toy he is playing with. Of course, the word pípo is not the only means the speaker has for making the hearer restructure the situation in the way intended by the speaker. Another likely utterance would have been ékso tóra ('out now') or still k'eyó ékso ('me out, too').

It would be interesting to study more closely what kind of extralinguistic information the child expresses linguistically. One would expect that a part of the child's acquisition of communicative competence consists of learning what kind of information to transmit linguistically in what situation. Much of the nonconformity of children's linguistic behavior is due to the fact that they will sometimes express too much information verbally and sometimes too little. In his inspiring paper, "On the Analyzability of Stories by Children" (1972), Sacks studies the structure of texts by relating them to social norms. Analyzing the two-sentence sequence "The baby cried. The mommy picked it up", uttered by a thirty-three-month-old girl he sets up a rule of economy for characterizing persons. When a speaker first refers to a child and then to a mother performing an action characteristic of her social role as a mother, it is not necessary to specify linguistically that the mother is the child's mother. Thus, in the afore-mentioned sentences the mother referred to is understood as being the baby's mother. Such rules are valid for adult utterances as well and it would be rewarding to study their acquisition by the child in the course of his communicative development. The child seems to possess rules for not expressing certain aspects of the situation at a relatively early age. Thus, when the object or action

to which a request pertains is obvious to the hearer, the child will not express it verbally. When one day the observer was showing Janna how to put a series of smaller boxes into the progressively larger ones, she said eyó ('me') in order to let the adult know that she wanted to take over, but she did not say kutákia ('little boxes') or the like.

On the basis of HS 1 and HS 2 the utterance pípo tóla can be interpreted as a wish pertaining to a certain garden. Without any further linguistic specification the hearer could understand on behalf of HS 1 that it was the speaker himself who wanted to get into the garden: The utterance pípo tóla occurred in a situation which was habitual for both the speaker and the hearer. Janna was usually taken out into the garden by the observer as soon as the other children started their playperiod. It was thus evident from the communication situation that (1) what Janna wanted in relation to the garden was to get there and that (2) the wish pertained primarily to herself and not to the hearer, although the wish may have pertained to the hearer as well.

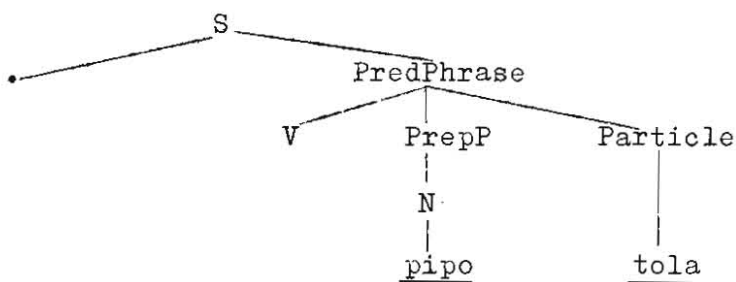
We are now ready to give a full interpretation of the utterance pípo tóla: it expresses the speaker's wish to get out to the place mentioned, a place which is recognizable for the hearer as the garden in the immediate vicinity of the place where the utterance is made, and to get there in the immediate future of the time of the utterance. This interpretation would also be the interpretation of the expanded utterance Θέλο να πάω στον κίπο τώρα ('I want to go into the garden now'), which is how an adult would linguistically grasp the given situation.

At this point, we have to make an important differentiation, namely, between the interpretation of an utterance and its linguistic content.¹⁰ To interpret an utterance, the hearer relies on linguistic information which he

is able to perceive because of his linguistic competence and he makes appeal to extralinguistic information (extralinguistic in the sense of not being phonetic-phonological, syntactic or semantic) by rules pertaining to the relation between language and extralinguistic reality. If we make a difference between a child's sentences and their use - a difference linguists make for adult language as well - we can on the one hand keep to what Brown has called "rich interpretation" of children's sentences and thus explain why children are so highly communicatively successful, but on the other hand we need not attribute more elaborate structure to children's sentences than they show (cf. (16) below).

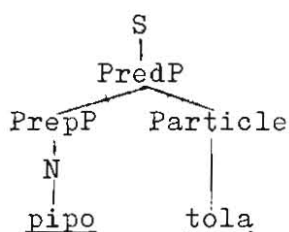
To point out the difference between Bloom's analysis and our own, we will sketch a description of the utterance pípo tóla as Bloom would. In her data, locative expressions are marginal and so she does not account for them in the children's grammars, but in the text, she hints at a possible description (pp.66-67 and 146). In the generative transformational model Bloom adopted, the utterance pípo tóla would be described as follows:

(12)



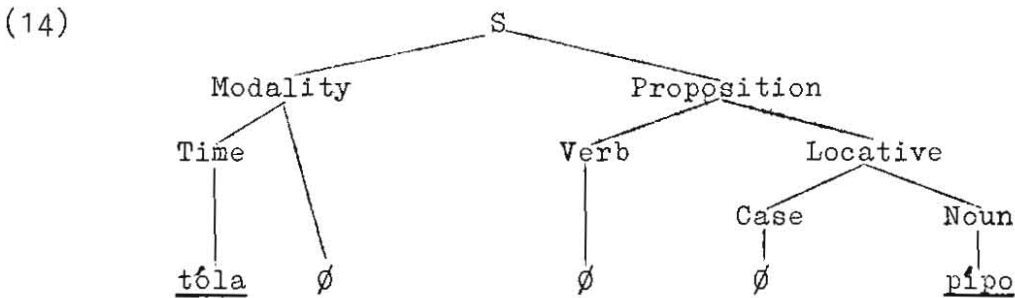
In the deep structure (12) the sentence S contains three nodes: Verb, Prepositional Phrase, and Particle, directly dominated by Predicate Phrase. To be mapped onto the surface structure (13)

(13)



the deep structure undergoes a reduction transformation deleting the node V. As Bloom intends her description to reflect the child's linguistic competence (cf. Bloom 1970: 147 cited above), the amount of structure attributed to the two-word utterance pípo tóla in terms of categories and their hierarchical arrangement is too great, as it could only be justified in an adult grammar generating the Greek equivalent of sentences such as I go into the garden now. Another drawback of the generative transformational analysis is the difficulty with the status of the reduction transformation mentioned earlier.

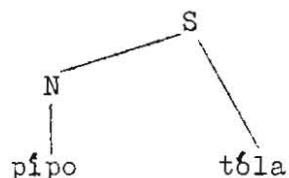
The deep structure Brown (1973) postulates for two-word sentences contain semantic functions. This somewhat reduces the hierarchical complexity in terms of categories needed in the generative transformational model. However, his deep structures are very elaborate, too, and except for the level of lexical elements, they look like deep structures of expanded adult sentences corresponding to the child's sentences. In the case grammar model Brown adopts the deep structure of pípo tóla would look like this:



Fillmore, in his studies on case grammar, has not elaborated his constituent MODALITY and Brown (1973) does not treat any examples with sentence adverbs like tóla. Putting tóla under the node MODALITY is therefore quite speculative. In order to account for the surface word order, the deep structure (14) must undergo a permutation operation, which is characteristic of case grammar descriptions. Furthermore, the category nodes dominating zero must be deleted. The

resulting structure is the surface structure (15). The word-class t6la may belong to, has been left unspecified.

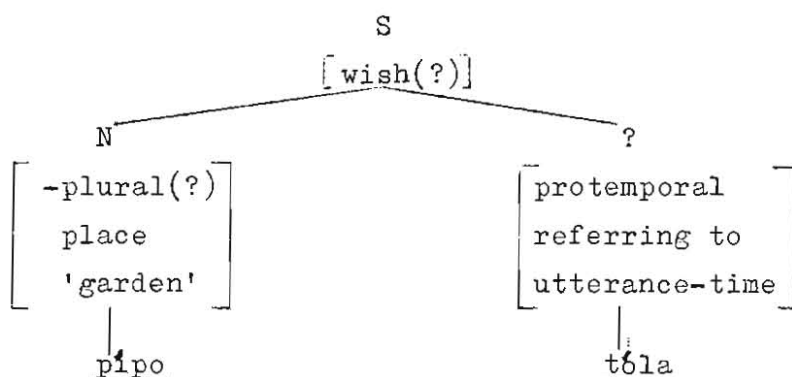
(15)



Brown's description raises problems similar to those concerning Bloom's analysis: How can a deep structure such as (14) with nodes such as MODALITY, VERB, and CASE be justified in terms of the child's linguistic competence? What is the status of the rules of permutation and node deletion? A description such as this seems just to "fill in" some of the terms missing in the child's sentence from the point of view of the adult language system and thus analyzes the child's sentence rather as a telegraphic version of a corresponding full adult sentence.

In order to account for the fact that, linguistically, two-word sentences like pipo t6la are highly unspecific, we will propose an analysis (16) that relates the semantic interpretation of such sentences directly to their syntactic surface structure. We thus do not set up syntactic deep structures nor do we need any erasure or permutation transformations to relate deep and surface structure. In this way we attribute less linguistic information to such sentences than do both the generative transformational model and the case grammar model discussed above.

(16)



The features marked with a question mark may or may not be linguistically represented. The function of the noun pípo has not been indicated as there is no linguistic evidence for the function LOCATIVE present in the utterance itself. The fact that pípo is understood by the adult hearer to have this function is due to the subcategory of place-names the word pípo belongs to, which gives the function LOCATIVE a high probability. In utterances such as ayapái sía ('like auntie'), for instance, subcategorical evidence does not allow us to determine the function of the noun sía ('auntie') as subject rather than object.

What makes it possible to disambiguate the child's utterances in most cases and to make them specific enough for most practical purposes of communication, is the kind of information inferred from the extralinguistic and/or extrasentential context. We sketched ways in which the taking into account of extralinguistic information for the interpretation of children's utterances might be systematized in terms of hearer strategies. The very fact that such systematization is possible, shows that there is a certain knowledge here on which hearers draw systematically. That the way the child learns to use such extralinguistic information in linguistic communication must be a part of the study of language acquisition is beyond doubt. What must be studied, then, is the acquisition of communicative competence by the child, a competence which comprises more than a set of rules for mapping messages onto sound waves. In order to study the different factors playing a part in linguistic communication and language acquisition, it is necessary, however, to separate what is linguistic in the child's speech and its interpretation from what is extralinguistic. Only in this way can the rich interpretation advocated by Bloom, Brown, and others in their analyses of child speech and practiced daily by the child's adult communication partners be seen in its proper light.

Linguistic communication relies on different things at the same time: on the linguistic code, but also, and equally importantly, on situational information, social norms, cognitive structures, and perhaps others.

N O T E S

¹ For evidence against a purely linguistic and completely general character of the regularities underlying early children's utterances cf. Clark (1974) and Stephany (in press).

² Chomsky (1965:71) defines the notion 'subject' as the relation between the NP immediately dominated by S and the S. 'Object' is defined as the relation between the NP immediately dominated by VP and the VP.

³ Bloom's reduction transformation (1970:69) obligatorily deletes one or two of three categorial elements present in the deep structure:

X Y Z
 $\#x_1 x_2 x_3 \longrightarrow \#x_i x_j$, where X, Y, Z are category symbols and $0 \leq i \leq j \leq 3$

⁴ In adult Greek babá is accusative singular; nominative singular would be babás.

⁵ The role intonation might play in the interpretation of early children's utterances will not be considered here. Although children seem to control adult intonation phonetically quite early they do not seem to use it consistently as a marker of sentence type until much later (Miller & Ervin 1964:335). The fact that adults get the impression that children use intonation adequately very early can be explained by the ambiguity of most situations of communication allowing for either a statement or a question on the child's part. The adult will thus be able to react communicatively adequately to the child's intonation and his impression that the child controls intonation will therefore be reinforced. Needless to say these matters will need further study.

- 6 Notice that HS 1 would not be applicable to the interpretation of a sentence such as "The industrial revolution took place in the nineteenth century". The interpretation of this sentence does not depend on the circumstances under which it is uttered, e.g. if it is said during a walk, waiting in line in front of a movie-theater, or in a lecture. The very phrase "in the nineteenth century" refers away from the immediate extralinguistic environment in which the utterance is made.
- 7 For an informal list of young children's communicative acts cf. Schnelle (1971)
- 8 Cf. Snow (1972), Snow et al. (1973), and Beheydt (in prep.).
- 9 An example of the nonapplicability of HS 2 would be an utterance like ti ine aftó? ('What is this?'), which is linguistically marked as a question (question-word ti and question intonation) and requires an answer, i.e., a linguistic reaction.
- 10 For the linguistic content of the utterance pípo tóla cf. p.8f. above and (16) below.

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