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ABSTRACT

Linguistic and cognitive competencies of preschoolers were revealed by interviewing them about routine activities. It was found that freeing preschoolers' speech from constraints inherent in talking about the immediate context results in their demonstrating control over a variety of language-related skills that are generally assumed to be beyond their competence. These include: (1) the simple ability to talk about, and thus presumably to represent, events not taking place in the here-and-now; (2) the ability to, and preference for, talking about these in general rather than specific terms; (3) the use of timeless reference; (4) the sensitivity to the temporal structure of activities and the ability to move "backwards" within a temporal structure to effect a "repair"; and (5) the appropriate use of a variety of relational terms that are infrequent in context-bound speech and that preschoolers appear not to understand in direct tests of comprehension. Attention is focused on the way in which the use of "if" and "or" indicated the flexibility and complexity of preschoolers' representations of familiar activities, and on the possibility of interpreting many of their "if" statements as timeless hypothetical references. In addition, the evidence that preschoolers' knowledge of familiar activities includes a representation of alternative and conditional pathways suggests that questioning them about such activities might provide a means of assessment of their ability to use the verb forms "could" and "would." (SW)

TAKING AWAY THE SUPPORTIVE CONTEXT:

HOW PRESCHOOLERS TALK ABOUT THE "THEN-AND-THERE"

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For several years, Katherine Nelson and her colleagues have been interviewing children about familiar activities. Approximately 300 middle-class children ranging from 2;11 to 9;5 have been questioned about activities such as getting dressed, going to a restaurant, having dinner at home, or lunch at their day-care center, making cookies, having a birthday party, going to the grocery, etc. The usual procedure used to elicit descriptions of these activities involved asking a general initiating question such as "Can you tell me what happens when...?" and then providing non-directive probes such as "Anything else?" and "Can you tell me more?" until the children indicated that there was nothing more they either could or cared to say on the topic.

The initial purpose of these interviews was to discover how children acquire and represent knowledge about routine activities, and was undertaken within the script framework first posited by Shank and Abelson (1977). In general, the data reveal that even very young children possess a great deal of complex, highly structured knowledge about routine, everyday activities (Nelson & Gruendel, 1981). An unexpected outcome of this research has been that in the interview setting, preschoolers appear to control semantic and pragmatic devices that are generally unobserved in other contexts and are therefore presumed to be beyond their capability. The language used by preschoolers in the course of describing familiar activities is sufficiently similar across children and activities, and sufficiently dissimilar to the language they use in other settings to convince us that we are dealing with

a discourse form having the potential to reveal quite different competencies than have been revealed in other settings. It will be these "unusual competencies" that will be described here. Many of the features to be described were replicated across studies and were as true of younger as of older preschoolers. Thus the data will be described in general terms, with reference to particular studies and to developmental trends only where this is particularly pertinent.

Studies of children's knowledge about language ordinarily take one of two forms. Studies of productive language typically rely upon children's spontaneous speech in free-play settings. Studies of the comprehension of particular vocabulary items or syntactic structures typically rely upon paradigms in which the experimenter makes a statement that includes the feature being assessed, and the child does something that can be interpreted as indicating whether he understands this focal feature. In either of these contexts, the attention of both participants is usually focused on toys or other objects in the immediate environment, and the adult and child tend to talk about the immediate context, that is, about the "here-and-now." While no one has concluded from such findings that adults' speech is limited to the here-and-now, there has been a tendency to assume, on the basis of the types of conversations in which children are likely to engage, that they can talk only about the here-and-now. That is, that they are unable to represent and describe the "then-and-there."

The interview data we obtained show that children at least as young as 2;11 are quite capable of talking about familiar activities outside the context of these activities, and in the absence of external props such as pictorial representations of the context. In one study three- and four-year-olds were asked to describe "dinner" both during the day at their preschool and in the

early evening in their own home (Nelson, Gruendel & Hudson, 1980). Not only could the children describe "dinner at home" while in the school setting, but they gave virtually the same description, in terms of both form and content, in that setting as they did in the more "contextually supportive" home setting.

That preschoolers are able to talk about the "then-and-there" when the discourse setting makes it necessary to do so is significant in its own right, and contributes to the growing body of revisionist literature claiming that preschoolers are less cognitive incapacitated than they have traditionally been characterized. More importa ly, "freeing" the preschooler's speech from constraints imposed by talking about the immediate context results in the use of language requiring competencies quite a bit more sophisticated than those ordinarily shown by, and therefore credited to, the young child. The remainder of this paper describes these competencies that seem to depend upon the occurrence of decontextualized speech.

One pervasive assumption about young children has been that their ability to generalize or abstract is limited. However, as the protocols in Table 1 indicate, the descriptions provided by even the young subjects tend to be general in nature; the children talk about "what happens" in general rather than about "what happened" on a particular occasion. In one study (Nelson, et al., 1980) three- and five-year-olds were asked questions phrased in both general terms, "What happens when you have dinner?" and in specific terms "What happened once--or yesterday--when you had dinner?" Although children of each age could respond to questions taking either form, they found it somewhat easier to respond to the general questions. Thus young children are not only capable of giving general descriptions, but, at least for habitual activities, they seem to find this a more natural way of talking about them.

Several interesting syntactic features occurred as a correlate of the generalized form of the descriptions. One was the use of general pronouns. Children typically used the general or impersonal "you" as in "you go" or "you put them in the oven." They also used the social "we," particularly when talking of group activities. Neither of these pronoun forms is likely to appear in conversations about the "here-and-now," but they are both highly appropriate and frequent in the discourse setting we established.

Another syntactic feature of the generalized accounts that is particularly noteworthy is the use of the tenseless or timeless verb form by even the youngest subjects. Forms such as "you eat" and "you go somewhere" are labeled timeless because they do not refer explicitly to the past, present, or future. Their frequent use is of particular interest because when Cromer analyzed longitudinal data gathered in free-play settings, he found that timeless speech did not appear until about age four. Both Cromer (1968) and McNeill (1979) interpreted the relatively late appearance of this grammatical form in terms of immature cognitive abilities placing a limitation on the development of syntactic complexity. Specifically, they hypothesized that it is not until about age four that children attain a level of cognitive competency that enables them to "decenter" from the immediate context to the extent necessary for the use of timeless reference. However, our data show that children use timeless reference appropriately, and therefore must have whatever cognitive skills underlie such expression, as early as the end of their second year. In the study in which subjects were asked to describe both what happens in general at dinner, and what happened on a particular occasion, both the three- and five-year-olds alternated appropriately between the timeless form for general accounts and the past form for specific accounts. This illustrates both the role of context in determining the production of syntactic forms, and the

danger of inferring incompetency from performance in a single context.

The next feature of the protocols I want to describe concerns their temporal organization. Since the children were being questioned about events with which they were familiar, it seemed plausible that they would also understand and express the temporal organization underlying the events. Although quite plausible at an intuitive level, this assumption is not supported by prior literature, which suggests that the construction of temporal order is either beyond the competency of preoperational children (Piaget, 1971; Fraisse, 1963) or that the demands of an expository task may prevent children from expressing temporal sequences appropriately even if they do understand them (Brown, 1976). Although Eve Clark (1973) has noted that when children start talking about more than one event, they mention them in the order of occurrence, her observations were made in a free-play setting in which children were commenting on ongoing events. Such contextually supported expressions of temporal structure may rely upon perceptual information, and so Clark's findings do not address the question we were interested in, that is, whether preschoolers would be able to rely upon an internal representation of event knowledge in order to correctly sequence their descriptions.

Several measures indicated that children did not, as previous research suggested they might, mention the events constituting the activities in a random order. When subjects were questioned about the same activity on two separate occasions, they were highly consistent both in terms of the events they mentioned and in the sequencing of those events (Nelson, et al., 1980). An analysis of one set of forty protocols in which children 2;11 to 5;6 described what happens at a restaurant indicated that the majority of the children included events having an invariant temporal relationship with one another and virtually always ordered these appropriately (French & Nelson, 1981).

Additionally, the careful reading of over 700 protocols reporting several thousand individual events revealed only 19 cases in which these forty children violated the correct sequence of invariantly ordered events; these violations were primarily either cases in which an act was mentioned twice, first in an incorrect, then in a correct position, or cases in which a conventional, but temporally reversed description was given, as in "I put on my shoes and socks."

The most theoretically interesting aspect of the temporal structure of the descriptions involves cases in which subjects recalled an event after the point in their description at which it would be appropriate to mention it. It is inappropriate for a speaker to simply mention such omitted events at the time they occur to him. Rather, he must somehow indicate where the event fits into the sequence being described. Some examples of such temporal repairs are presented in Table 2. These temporal repairs are significant in that they indicate that the speaker not only has an internal representation of the temporal organization of the activity being described, but also has the ability to move bi-directionally within that representation. Together, these features appear to meet Piaget's criteria for temporal reversibility (Ferreiro & Sinclair, 1971) and thus according to his theory, should not be within the competence of children under about seven. Again, this discourse setting appears to elicit competencies not generally observable in either free-play or experimental settings.

Now I would like to turn from describing the general structure of the preschoolers' descriptions to a consideration of their use of a particular class of vocabulary items that I will refer to as relational terms. These are terms such as <u>before</u>, <u>after</u>, <u>because</u>, <u>so</u>, <u>if</u>, <u>but</u> and <u>or</u> which serve to establish a relationship between two propositions. Comprehension studies have typically shown that preschoolers do not understand the function or meaning of

such relational terms. However, it is our belief that comprehension paradigms often place cognitive demands on subjects that are irrelevant to the basic question of whether they know the meaning of a particular term. It is for this reason that the spontaneous production of relational terms is particularly interesting. Although production measures are not without their own problems, contextually and semantically appropriate productions of relational terms often offer compelling evidence that the speaker does indeed understand their meaning.

One problem with relying on spontaneous productions of particular terms to infer understanding is that the frequency of occurrence may be very low. For example, one investigator reported spending four days in preschool classrooms and obtaining only three spontaneous productions of or (Ford, 1976). It appears that when conversation concerns the here-and-now, there is often little need to use relational terms, either because the relationships are not relevant to the topic or because they are apparent in the extralinguistic context. In contrast, our interview data contain numerous productions of relational terms. The requirement that subjects talk about the then-and-there removed the possibility that their speech would either be limited by or rely upon the extralinguistic context and thus increased the appropriateness and frequency of relational terms. In addition, the types of activities the children were asked to describe had a temporal/causal/conditional structure that made the use of relational terms especially appropriate.

In light of the large body of literature showing that preschoolers fail to comprehend various relational terms, we were somewhat surprised that our subjects virtually never used any of the relational terms inappropriately. Whether this indicates that children simply do not use these terms unless they are certain of their meaning, or whether it has to do with their familiarity with the relational structure of the events is a question for future study.

Support for the latter possibility is offered by anecdotal reports that preschoolers often use relational terms inappropriately when talking about unfamiliar events, and by some data from our lab showing that three-year-olds demonstrate appropriate comprehension of before and after when these terms refer to well-known, logically invariant sequences, but fail to comprehend them when they refer to arbitrarily established sequences (Carni & French, 1981).

A number of investigators have studied children's comprehension of if... then and or, and concluded that these terms are not understood by young children. However, these investigators have, for the most part, been concerned with assessing children's sensitivity to the truth-table, or formal logic, meanings of these terms, and their findings are therefore not of direct relevance to the question of whether children understand the "ordinary language" meanings of the terms. Very little attention has been given to how preschoolers use these terms in their spontaneous speech, and anecdotal reports rather than systematically collected data apparently form the basis for claims of incompetency, such as Emerson's statement that young children "often use if loosely, to string together a series of events regardless of temporal order and whether or not they are logically related (1980, p. 154)."

As Shank and Abelson originally described scripted activities, they consist of both a general skeletal framework of obligatory actors and actions, and alternatives existing within that general framework. For example, going to a restaurant necessarily involves eating, but eating dessert is optional. The fact that alternative possibilities existed within the general structure of the activities we questioned children about made the use of if and or particularly appropriate. Whereas younger children tended to provide "and-linked" lists of acts or items that might co-occur, children four and older

were likely to mention either alternatives, that is, events or acts that were unlikely to co-occur, or conditionals, that is, events that would occur under certain non-obligatory conditions. Such alternatives and conditionals were typically marked with or and if respectively. Examples of lists, conditionals, and alternatives are shown in Table 3.

One of our data sets, produced by 43 children ranging in age from 2;11 to 5;6, has been analyzed for the occurrence of explicit marking, with or or if, of some items as optional. We found that if and or constructions begin to appear at about age four and are relatively frequent by age five. The percentages of children of each age using these terms are shown in Table 4. These two terms were invariably used appropriately, contrary to the prediction that might be made on the basis of prior investigations of children's comprehension of these terms. It seems likely that both the correctness and frequency with which if and or were used by our subjects derive from features of the discourse context we established.

We think it is worth stressing that the high level of understanding of relational terms in general, and of if and or in particular, that preschoolers show in their spontaneous speech must cast serious doubt on the conclusions of incompetency that are drawn on the basis of preschoolers' performance in experimental settings designed to assess their comprehension of these terms. We won't belabor the point here, since it has been discussed at length elsewhere (French & Nelson, 1981; French & Nelson, in prep.), but it seems highly likely that comprehension paradigms involve task demands, for example, metalinguistic judgments, that are both more advanced than and irrelevant to the basic question of comprehension of a particular term. This may result in these paradigms masking, rather than adequately assessing, preschoolers' understanding of relational terms.

One domain of contemporary interest for which our subjects' productions of if statements has particular relevance is the development of hypothetical reference. The prevailing doctrine for many years has been that preschoolers are incapable of hypothetical thought. While other critics have voiced dissatisfaction with this claim, Kuczaj & Daly's (1979) research was the first to systematically consider preschoolers' productions of hypothetical statements. Kuczaj and Daly defined six different types of reference to non-present happenings. These include past and future actuality, cases in which the speaker believes the event referred to happened or will happen, past and future open possibility, cases in which the speaker believes the event referred to probably happened or will happen, and past and future hypothetical statements, cases in which the speaker believes the event referred to could, but probably did not or will not occur. Kuczaj and Daly claim that these six categories are exhaustive in that all reference to non-present activities involves at least one of these reference categories. However, their definition of hypothetical reference is overly restrictive in that a hypothetical statement need only refer to a non-actual--not necessarily a disbelieved--state, and this state need not be referenced with regard to past or future time. In conjunction with the timeless nature of their discourse, our subjects' use of if...then conditionals result in what appear to us to be timeless hypothetical statements, examples of which are presented in Table 4.

Although such utterances neither fit into Kuczaj and Daly's taxonomy of "non-present happenings" nor require explicit marking with could or would, they nevertheless seem to have a hypothetical status. These data suggest that broadening the definition of hypothetical reference to include timeless references may increase the frequency with which spontaneous productions may be observed and thus provide more information on which to base conclusions about the

types of events to which preschoolers spontaneously make hypothetical reference. In addition, the evidence that preschoolers' knowledge of familiar activities includes a representation of alternative and conditional pathways suggests that questioning them about such activities, rather than about parents or story characters, as Kuczaj and Daly did, might facilitate their adoption of the questioner's hypothetical framework and thereby provide a more sensitive assessment of their ability to use the verb forms (e.g., could and would) that are obligatory in the production of temporally referenced hypothetical statements.

The point that ties together the various and somewhat disparate topics discussed above is that freeing preschoolers' speech from constraints inherent in talking about the immediate context results in their demonstrating control over a variety of language-related skills that are generally assumed to be beyond their competence. These include (1) the simple ability to talk about--and thus presumably to represent--events not taking place in the here-and-now; (2) the ability to, and indeed preference for, talking about these in general rather than specific terms; (3) the use of timeless reference; (4) the sensitivity to the temporal structure of activities and the ability to move "backwards" within a temporal structure to effect a "repair"; and (5) the appropriate use of a variety of relational terms that are infrequent in context-bound speech and that preschoolers appear not to understand in direct tests of comprehension. Of these relational terms, before and after and but have been discussed elsewhere (French & Nelson, 1981; French, 1981). Here we focused on the way in which the use of if and or indicated the flexibility and complexity of preschoolers' representations of familiar activities, and on the possibility of interpreting many of their if-statements as timeless hypothetical references.

All of these competencies that have been described are relevant to topics of current concern in developmental psychology, and are particularly significant because they have not been detected in research relying on more standard means of data collection. In short, interviewing preschoolers about routine activities cannot teach us much we don't already know about such mundane activities as getting dressed and going to the grocery. But it can teach us a lot we don't already know about their linguistic and cognitive competencies.

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Table 1
Sample Protocols

S# 2 (2;11)	(What do you do when you get dressed in the morning?) I go to school. (Anything more you can tell me about getting dressed?) Just put your tights on and your sneakers on. (Just put your tights and sneakers on. What else do you do?) Just put your raincoats on. And then you take them off at school.
S# 3 (3;1)	(What do you do when you go grocery shopping?) Well, you um, pick some food and then go home.
S# 7 (3;5)	(Tell me about a birthday party.) You get, you get ice cream and cake. (You get ice cream and cake. Anything else you do?) No.
S#13 (4;0)	Well, you drive and then you go in and eat, then that's all.
S#19 (4;2)	(Can you tell me what you do when you have a fire-drill at school?) You walk fast but you can't put your coats on 'cause you need to hurry. (So you walk real fast, and you can't put your coats on, you have to hurry?) Once when I was having a fire-drill, I had a sweater on so I didn't, so I wasn't cold. (That was lucky, wasn't it: Anything else that you do when you have a fire-drill? Anything else that happens?) We need to walk down the fire-escape. (Umm, that's unusual. Anything else you remember about what you do when you have a fire-drill?)
S#42 (4;6)	When you make cookies, well ya, um, make the dough, and you um, get the cookie cutters out, and cut 'em and put decorations on. And then put 'em in the oven, and then when they come out, you could eat 'em.

Table 2
Temporal Repairs

S #1 (2;11)	(How do you help your mommy?) Yeah, she gets something out to make muffins with. But first she has to buy some things for muffins.
S#17 (4;1)	You know what I do is, I just blow off the candles and eat it. And before I eat it, I just take out all the candles.
S#24 (4;7)	And um, the person will open it, and take off, take off the ribbon before they open it, and they'll find out what's inside.
S#38 (5;4)	You---you can---you sit down and eat ice cream, but first what you do is really play, and then eat ice cream and cake. And then you go home.

Table 3
Lists, Alternatives, and Conditionals

LISTS:

S# 4 (3;1)	(Tell me about grocery shopping.) Get some carrots and meat and celery. (Some carrots and meat and celery?) Ayl some lettuce. (Anything else?) Uhh, meat. (And what else do you do? Nothing else.
S# 1 (2;11)	(What do you do at a birthday party?) Eat cake and wish and ice cream and cones. Candy. (You have all those good things to eat. Anything else that you do at a birthday?) -- no reply —

ALTERNATIVES:

S#15 (4;0)	And then we buy some stuff and then we go home or go to school or go to Stuart's.
S#37 (5;1)	I sometimes, I put an undershirt on, sometimes I put a slip on. Then I put a dress or pants or shorts or skirt, and then I put a shirt on, whatever, then I put my coat on.
S#42 (5;6)	And um, buckle your shoes or tie 'em.
S#25 (4;7)	Put your clotes on, eat breakfast, go to work or to school: that'e it.

CONDITIONALS:

S#16 (4;0)	Well, you see, after, if you eat all your food up, ya get dessert.
S#20 (4;3)	Are there strawberry cookies? (There could be.) I never cooked them, but I'll try cooking them if my mommy buys it.
S#29 (4;8)	Well, my mommy always gets angry with me if I put the wrong things out and she uses them when she's not supposed to use those things.

Table 4
Percentages of Subjects using If and Or

Age Range	IF	OR
2;11-3;10 N=12	8% (1/12)	0
4;04;11 N=23	39% (9/23)	35% (8/23)
5;0-5;6 N=8	63% (5/8)	100% (8/8)

Table 5

Timeless hypothetical reference

S#42 (5;6) Sometimes, if you have a child or a baby, you put it in the cart. And sometimes, sometimes, um, you don't need a cart if you have just a few things to shop for. ... And sometimes if you don't have the cart you have to carry a person, because it's a baby.

S#37 (5;1) Well, if they have one here for real, you have to crawl or roll to get the fire out. If the heater was on hot, and it was coming smoke and fire--everything on fire, you would just get out and cough.

S#38 (5;4) Buy food, or if you wanna, you return something that you don't want.

S#28 (4;8) But sometimes Thursday you don't go to school. All you do is just eat breakfast and get dressed if you want, but you could stay in pajamas too.