The Role of Discourse Novelty in Early Word Learning

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From early infancy children preferentially attend to novel or changing stimuli, as evidenced by the well-known phenomenon of dishabituation (e.g., Fanz, 1964). A number of researchers have argued and presented evidence that, from its inception, the use of language is coordinated with this characteristic of the attentional system. It has been found, for example, that the vocalizations of prelinguistic infants tend to occur at points of attentional change (Furrow & James, 1985; Hilke, 1988). Moreover, when children begin to use conventional language itself, their first words and utterances are used to report on new or changing elements in their environments as part of a larger orienting response (Lempert & Kinsbourne, 1985). Greenfield and her colleagues have shown that slightly older children, who have at their command a number of linguistic choices, tend to verbalize that element that is new to the situation. For example, if a child has been watching a sibling place blocks in a box, and the sibling suddenly places a ball in the box, the child is likely to verbalize “ball” at that point in the interaction (Greenfield, 1979, 1982; Greenfield, Reilly, Leaper, & Baker, 1985). Greenfield and Zukow (1978) and Baker and Greenfield (1988) have provided experimental confirmation for this finding by manipulating elements in scripted situations and demonstrating that young children tend to talk about what is new in the current discourse context.

It does not necessarily follow, however, that children are talking about what is new or most informative for the listener. Verbalizing the new element in a given context may simply reflect the fact that children speak about what is new from their own perspective; that is, they may egocentrically talk about whatever new thing captures their attention. Greenfield’s data do not address this issue, as the experimental studies have involved situations in which the critical elements were new to both the speaker and listener. However, a separate body of research on the communicative abilities of young speakers suggests that they may indeed be attuned to the perspectives of their listeners. Golinkoff (1993) has recently reviewed evidence that young children adjust their language for different situations and interlocutors; for example, they respond differently to requests for clarification depending on the

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familiarity of the person making the request (Tomasello, Farrar, & Dines, 1984; also see O’Neill, 1993).

Thus, it appears that young children can demonstrate sensitivity to the informational needs of others in their early language production. If this is true, it is plausible to assume that they make use of this sensitivity in their comprehension and learning of language as well. There is only scant evidence for this hypothesis, however. The only available data are observations that children learn words for variable or changing phenomena. For example, Greenfield (1973) reported that her daughter learned her first word dada not when her father was a static presence, but only when the word was said as her father was entering the room, that is, when he was a novel perceptual stimulus. Along these same lines, Nelson (1973) reported that children learn their first words mostly for variable phenomena—salient activities or objects that change or move (e.g., baths and people)—and not for things that remain constant (e.g., breathing and walls). There are to our knowledge no experimental tests of the hypothesis that novelty itself aids children in word learning. Such a test would involve a situation in which an adult uses a new word in the presence of a number of unnamed but potentially nameable referents, only one of which is novel to the situation. If children were able to attach the new word to the novel referent in this situation, it would indicate that they rely on novelty in word learning.

The fact that children can use novelty to learn a new word, however, does not address the issue of whether children understand that adults tend to talk about the elements in a situation that are novel or changing for the adults themselves. Even if a child was to learn a new word for the novel element in the above-described situation, it would be unclear whether she was able to understand the perspective of the adult uttering the new word or whether her attention was simply automatically (egocentrically) drawn to the novel element, resulting in the pairing of that element with the new word. Some lexical training studies would seem to support the egocentric interpretation, demonstrating that it is easier for a child to learn a new word when adults follow into the child’s already established focus of attention than when adults use a new word for something at their own focus of attention (Dunham, Dunham, & Curwin, 1993; Tomasello & Farrar, 1986). Baldwin (1991, 1993) has replicated this result but has also shown that children as young as 19 months of age are able to learn new words when they are required to shift their attention away from an object they are looking at to one the adult is looking at. In this “discrepant labeling” situation children almost never associated the new word with what they were looking at when they heard it. This finding demonstrates children’s knowledge that an adult’s focus of attention may be different from their own and is supported by studies showing that children are able to use a variety of cues to determine an adult’s focus at around this same age (Akhtar & Tomasello, in press—a; Tomasello & Barton, 1994). None of these studies of language learning, however, has directly addressed the question of whether children know what is new for another person in the situation and that the new element is what the other person is likely to be talking about. The only way to address this question is in an experimental paradigm in which the element being named is new for the adult but is not new for the child.

Two experiments were conducted. The first addressed the question of whether children assume that a new word is being used to refer to the novel element in a situation. Twenty-four-month-old children heard a new word modeled (with an excitement consistent with the adult having spied a new and interesting thing) in the presence of four objects for which they had no name. None of these objects was singled out by gaze direction or any other immediate cues. Three of the objects were familiar in that they had been played with previously; one was new to the discourse context. If children use novelty as a cue in object label learning, they should be more likely to choose the novel object in a subsequent comprehension test than a control group of subjects who experienced the same procedures but did not hear a new word. Such a result would suggest that novelty aids young children in acquiring object labels, but it would not necessarily imply an understanding that adults tend to talk about things that are new to them. The second study, therefore, modified the procedures of the first study so that children played with all four nameless objects, but the mother and an experimenter only played with three of them, leaving the room before the fourth object was introduced. Therefore, when the language model was given, no object was new to the child but one object was new to the adults. If in a subsequent com-
prehension test, children were more likely than their control counterparts to choose the object that was new from the adults’ perspective, this would imply that they understand not only that adults use language for things that are new to the situation but also that this newness is determined from the speaker’s point of view.

Study 1

Method

Subjects.—Potential subjects were recruited by telephone from a list of mostly white, middle-class parents who had volunteered to participate in studies of child development. Only children whose parents reported that they were using some productive language were invited to participate, and parents also completed a productive vocabulary checklist after the experimental session (Form A of the short version of the MacArthur Communicative Development Inventory; Reznick & Goldsmith, 1989). Data from three children were deleted due to noncompliance or inattention (two boys) or procedural error (one girl). The final sample consisted of 16 boys (10 firstborns) and 16 girls (nine firstborns), ranging in age from 2-0.8 to 2-1.6 (M = 2-0.22). The children were randomly assigned to the experimental or control condition such that there were approximately equal numbers of males and females and firstborns and laterborns in each condition. The mean values for parental estimates of vocabulary and noun vocabulary as a function of condition are shown in the first two rows of Table 1. There is a total of 123 words on the checklist and 65 words that were categorized as object labels. As a check on random assignment, the estimates of vocabulary size were compared across conditions and revealed no significant differences; t < 1 in both cases.

Materials.—Four novel objects were used: a liquid timer, a novelty yo-yo, a small kalimba, and an object that made noises when buttons on it were pressed. Each of the four objects occurred as the target object for four children in each condition. Parents were shown the objects and asked to indicate if their child would produce or comprehend a name for any one of them. A reserve set of unfamiliar objects (e.g., wallpaper roller, beanbag frisbee) was used to replace any object for which a given child already had a label. An additional set of familiar objects (a plastic Barney figure, a ball, a cup, and a spoon) was used in a warm-up comprehension task.

Training procedure.—Children came with a parent to a playroom at the psychology department. All sessions were videotaped. Sessions began with a warm-up period during which children played with one of the experimenters (E1) while the other experimenter (E2) explained the procedure to the parent. Parents were asked not to label any of the objects and not to request labels from their children. Then E1, E2, the child, and the parent played together on the floor with three of the four experimental objects as follows. E1 took one object (in random order) out of an opaque bag and demonstrated an action on it, for example, played the kalimba. E1 then gave the object to the child, encouraging the child, and then the parent and E2, to examine the object and perform the demonstrated action on it. Each participant then took turns dropping the object down a plastic chute. All of the objects were referred to by pronouns (it, that, this) and none was labeled at any time. This procedure was repeated with each of the remaining two nontarget objects so that the child and all three adults became familiar with the first three objects, but the objects

### Table 1

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<thead>
<tr>
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<th>Vocabulary</th>
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<tr>
<td><strong>Study 1:</strong></td>
<td></td>
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<tr>
<td>Experimental (N = 16)</td>
<td>63.9 (32.0)</td>
<td>32.2 (15.7)</td>
</tr>
<tr>
<td>Control (N = 16)</td>
<td>67.4 (31.4)</td>
<td>34.8 (15.1)</td>
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<tr>
<td><strong>Study 2:</strong></td>
<td></td>
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<tr>
<td>Experimental (N = 24)</td>
<td>67.1 (32.4)</td>
<td>34.5 (15.0)</td>
</tr>
<tr>
<td>Control (N = 24)</td>
<td>70.3 (30.8)</td>
<td>36.0 (15.0)</td>
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**Note.**—Vocabulary and Noun Vocabulary was assessed by a short checklist, Reznick & Goldsmith, 1989. Standard deviations are in parentheses.
all remained nameless. The fourth object, the target object, remained in the bag out of sight of the child, the parent, and E2.

After playing with the first three objects, E2 and the parent distracted the child while E1 placed the three familiar objects, along with the fourth, novel object, in random positions in a clear plastic box. E1 covered the box with a transparent lid and put it on the floor. For children in the experimental condition, E2 grasped the box from both ends and said in an excited tone, “Look, I see a modi! A modi! I see a modi in there!” The parent then added, “Look, a modi! I see a modi!” for a total of five models of the novel label in the experimental condition. Children in the control group experienced the same procedures with the exception that no novel word was modeled. Instead, for this group, E2 exclaimed “Look! Look at that! Look at that in there!” and the parent added, “Look at that! Look at that!” It is important to note that in both conditions adults spoke without pointing or looking at any one object; their focus was on the box as a whole. Thus, in the immediate physical context there were no transparent cues to the referential intent of the adults; the only cue available was the novelty of one object in the discourse context. As a check to ensure that the adults had not provided inadvertent cues, a blind coder made judgments as to which object was the target of the adult’s exclamations. She chose the novel (target) object on only six out of 30 judgments (20%), which is not significantly different from chance (25%) by a binomial test \( p = .67 \).

All participants then played with all four objects for 3–4 min; again, no labels were provided. The purpose of this phase of the procedure was to provide the child with the opportunity to examine and interact with the new object without singling it out. The objects were not withdrawn at the end of this period if the child indicated a desire to continue playing with them. The final play period thus ensured that children’s choice on the comprehension task (see below) would not be biased by their not having had sufficient opportunity to play with the target object. This period also allowed for spontaneous production of the novel word; if a child did produce the word spontaneously, no feedback was provided.

**Testing procedure.**—All children in both conditions experienced the same testing procedures as follows. After the language models and play period, E2 first administered a practice comprehension test with four familiar objects. She placed all four objects (a cup, a ball, a spoon, and a plastic Barney figure) in a box and asked the child to show/give each object to her in turn (e.g., “Can you show me the cup?”), replacing each object after the child had chosen it and correcting any errors. The four familiar objects were then exchanged with the four experimental objects (presented in random positions) and the child was asked to show/give E2 the “modi” as a test of comprehension of the novel word. The request was repeated, if necessary, until the child distinctly chose an object (almost always by pointing to it or giving it to E2). E2 maintained eye contact with the child during the test so as not to single out any object by means of gaze direction. (To ensure that E2 had not provided any inadvertent cues, a blind coder subsequently made forced-choice judgments as to which object was the target. She was correct on only 9 out of 28 judgments; binomial probability = .51.) E1 recorded the object chosen by the child live on a code sheet. An independent, blind coder subsequently scored 25% of the comprehension trials, randomly chosen from the videotapes, and achieved 100% agreement with the live coder as to which object was chosen.

E1 recorded throughout the session any instances of spontaneous productions by the children. An elicited production test was also administered. For this test, E2 removed the nontarget objects from sight, held up the target object, and asked the child to name it (e.g., “What is this? What is this called?”). This request was repeated, if necessary, by E2 and/or the child’s parent. Two blind coders subsequently independently coded all instances of production of the target word (spontaneous and elicited) as to which of the four objects the child was referring to, based on which object they were looking at, pointing to, or holding up (coders also could code a production as “ambiguous”). The coders agreed on 100% of their decisions. A third individual then used these codings, along with information about which object was the target for a given child, to determine whether a given use of the target word was appropriate, that is, was used in reference to the target object. Children were given credit for production only if they were clearly referring to the target object when they uttered the experimental word.

**Results**

The analysis of results is in terms of the number of children who comprehended,
produced, or showed any learning (comprehension and/or production) of the target word. Where expected frequencies were high enough (>5), chi-square tests of significance were used; where they were not, Fisher exact probabilities were calculated. Because we had directional predictions in all cases, one-tailed tests of significance were employed.

The first row of Table 2 shows the number of children who evidenced comprehension of the novel word by choosing the target object when asked to give E2 the “modi.” Two children in the control group and eight of the experimental subjects chose the target object. The distribution of frequencies in these two groups was significantly different, $\chi^2 = 5.24, p < .02$, indicating that more experimental subjects chose the target object in the comprehension test than did control subjects.

As shown in the second row of Table 2, five experimental subjects appropriately produced the novel word, either spontaneously or in the elicited production task; no control subjects did so. The two groups were significantly different from each other (Fisher exact probability = .02). It could be argued that the procedure used in the elicited production task—holding the target object up and asking for a label—may have induced the children to use the novel word they had just heard regardless of which object was held up. However, it is important to note that (1) no child in the experimental group produced the novel word for an incorrect referent at any time during the experiment and (2) of the five children who produced the novel word appropriately, three did so spontaneously and a fourth was successful on the comprehension task (in addition to producing the word in the elicited production task). There is thus only one child for whom the sole evidence of word learning is elicited production.

As a final comparison between the experimental and control groups, subjects were classified as either learners or non-learners based on whether they were successful in the comprehension task and/or produced the word appropriately (shown in Table 2 as “Any Learning”). Ten experimental subjects showed evidence of some form of learning, whereas only two control subjects showed such evidence. The groups were statistically different, $\chi^2 = 8.53, p < .01$. No differences were found between learners and non-learners on the basis of gender, birth order, or vocabulary size.

**Discussion**

These results demonstrate that 24-month-old children can use novelty to the discourse context as a cue in learning a novel object label. Procedural factors other than newness to the discourse context that might have differentially enhanced the target object (e.g., playing with it last) cannot explain the comprehension performance of children in the experimental group, since children in the control group experienced the same procedures but chose the target object significantly less than their experimental counterparts. It is important in this context to be clear about what children in the control group were doing. In the comprehension test when the control children were asked “Show me the modi,” this was the first time they had heard the word, and some time had passed (with intervening play with all four objects) since the adult had shown excitement upon seeing the target object by saying “Look at that!” It is possible, indeed likely, that when control children first heard the adults saying “Look at that!” they assumed it was the new object (the target) they were excited about. Nevertheless, when later the child was asked for the modi, she had no reason to assume it was the object the adults had singled out some time previously. The same reasoning applies to the elicited production task—even if the control children knew at the time of initial exposure to the novel object which one the adult was excited about, they had no reason to suppose that the novel word (which they only heard much later in the comprehension test) was connected to that object. The comparison between the control and experimental groups would seem to suggest, therefore, that the children in the experimental group were indeed processing the linguistic model as an act of linguistic reference at the time it was given, and that their performance on the comprehension and production tasks was

| **TABLE 2**
NUMBER OF CHILDREN IN EACH CONDITION
COMPREHENDING, PRODUCING, AND DISPLAYING ANY LEARNING (Comprehension and/or Production) OF THE TARGET WORD IN STUDY 1 |
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<tr>
<td>Experimental (N = 16)</td>
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</tr>
<tr>
<td>Comprehension ......</td>
</tr>
<tr>
<td>Production ..........</td>
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<tr>
<td>Any Learning ........</td>
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not due to some procedural artifact. Although only 10 of 16 experimental subjects showed signs of word learning, it is important to recall that there was only a single exposure to the novel object accompanied by the target word (of which there were five tokens)—due to the fact that the object could be new to the discourse situation on only one occasion.

There are at least two possible explanations for how the novelty of the target object might have aided the experimental children in attaching the label to it. First, the egocentric account would be that the children’s attention was automatically attracted to the novel object at the same time as they encountered the novel word, and they formed an association as a result—without paying any attention to the adult at all. On the other hand, the nonegocentric account would be that the children understood something about how the adults were using the new word. Thus, it could be that they realized that if the adults were going to label one of the nontarget objects they would have done so during the initial play session; they could have then ruled out the nontargets as potential referents of the novel word. Another possibility along these lines is that the experimental subjects knew that adults tend to get excited about new things, which would also lead them to the target object as the referent of the new word. The egocentric and nonegocentric explanations cannot be distinguished in the current study. What is needed to distinguish them is a situation in which what is new to the adult is not new to the child. This was the rationale for Study 2.

Study 2

Method

Subjects.—Subjects from Study 1 also participated in Study 2. Five children (four males) were noncompliant or inattentive, and two (one male) were dropped due to procedural errors. Twenty-one additional subjects from the same pool were recruited for participation in Study 2 for a final sample consisting of 24 males (14 firstborns) and 24 females (16 firstborns), ranging in age from 2-0.5 to 2-1.20 (M = 2-0.21). Children who had been randomly assigned to the experimental condition in Study 1 were assigned to the control condition in Study 2 and vice versa. The reason for this assignment was to avoid having any child participate in two control conditions (as parents had been invited for participation in a study of word learning, we felt it would be inappropriate to then not teach their children a new word in either of the two studies). The additional subjects also participated in the procedures of Study 1 to ensure that they would have had the same experience before starting Study 2. There were approximately equal numbers of males and females and firstborns and laterborns in each condition. The mean values for parental estimates of vocabulary and noun vocabulary as a function of condition are shown in the last two rows of Table 1. As a check on random assignment, these estimates of vocabulary size were compared across conditions and revealed no significant differences; \( t < 1 \) in both cases.

Materials.—Four novel objects were used: a brightly colored wooden ratchet, a novelty top, a set of connected blocks with bells inside, and a wooden toy that wobbled when rolled on the floor. Each of the four novel objects occurred as the target object for six children in each condition. As in Study 1, experimenters ascertained that objects were novel to children by parental report and replaced any objects for which parents said children already had labels (back-up objects were the same as in Study 1).

Training procedure.—Study 2 employed all the same procedures as Study 1 with one critical difference: the children were first exposed to the target object while their parent and E2 were out of the room. Thus, as in Study 1, E1, E2, the child, and the parent played together with three of the experimental objects. In each case, E1 took an object in random order out of a bag, demonstrated an action on it, and gave it to the other participants. Each participant had a chance to examine the object and perform the demonstrated action on it. They also took turns catapulting it from a plastic launcher. After the child and each adult were familiar with the three nontarget objects, E2 and the parent left the room (or, in the case of a very few children who protested, sat in chairs at the end of the room with their backs turned to E1 and the child). While E2 and the parent were outside, E1 and the child played with the fourth, novel object in a manner similar to that in which they had played with the other three: E1 demonstrated an action on the object, gave the child a chance to examine it and perform the action, and then both took turns catapulting the object. In introducing the object, E1 said, “Look at this new one” and once while playing with it, “Mommy can’t see this one.”

Before calling E2 and the parent back, E1 placed the four objects (the three objects
with which all participants had played and the object only E1 and the child had seen) in a clear plastic box\(^1\) and put the box on the floor in the middle of the room. Thus, when E2 and the parent returned, one object was new to them, but no object was new to the child. For children in the experimental condition, E2 said in an excited tone, "Look, I see a gazzer! A gazzer! I see a gazzer in there!" The parent then added "Look, a gazzer! I see a gazzer!” for a total of five models of the novel label in the experimental condition. Children in the control group experienced the same procedures with the exception that no novel word was modeled. Instead, for this group, E2 exclaimed, "Look! Look at that! Look at that in there!" and the parent added, "Look at that! Look at that!" It is important to note that in both conditions adults spoke without pointing or looking at any one object; their focus was on the box as a whole. Thus, in the immediate physical context there were no transparent cues to the referential intent of the adults; the only cue available was the novelty of one object in the discourse context for the adults. Again, as a check to ensure that the adults had not provided inadvertent cues, a blind coder made forced choice judgments as to which object was the target of the adult’s exclamations; she chose the target object on only nine out of 44 judgments (20%; binomial probability = .60).

All participants then played with all four objects for 3–4 min; no labels were provided. This period allowed for spontaneous production of the novel word.

**Testing procedure.**—The testing procedures were basically identical to those of Study 1. The comprehension test involved E2 placing the four experimental objects in random positions in a box and asking the child to give her the “gazzer.” The request was repeated, if necessary, until the child distinctly chose an object (almost always by pointing to it or giving it to E2). E2 maintained eye contact with the child during the test so as not to single out any object by means of gaze direction. A blind coder was correct at guessing which object was the target on only 8 out of 41 trials (binomial probability = .53). E1 recorded the object chosen by the child live on a code sheet. An independent, blind coder subsequently scored 25% of the comprehension trials, randomly chosen from the videotapes, and achieved 100% agreement with the live coder as to which object was chosen.

After comprehension testing, an elicited production test was administered. For this test, E2 removed the nontarget objects from sight, held up the target object, and asked the child to name it (e.g., "What is this? What is this called?")). This request was repeated, if necessary, by E2 and/or the child’s parent. Two independent, blind coders subsequently coded all instances of production of the target word (spontaneous and elicited) as to which of the four objects the children were referring to, based on which object they were looking at, pointing to, or holding up (coders also could code a production as “ambiguous”). The coders agreed on 100% of their decisions. A third individual then used these codings to determine whether a given use of the target word was appropriate (i.e., clearly referred to the target object), and the children were given credit only for appropriate uses.

**Results**

The first row of Table 3 shows the number of children who evidenced comprehension of the novel word by choosing the target object when asked to give E2 the “gazzer.” Four children in the control group and 10 children in the experimental group chose the target object. The distribution of frequencies in these two groups was significantly different, \(\chi^2 = 3.63, p < .03\), indicating that experimental subjects chose the target object in the comprehension test more often than did control subjects.

As shown in the second row of Table 3, seven of the experimental subjects appropriately produced the novel word, either spontaneously or in the elicited production task; no control subjects did so. The two groups were significantly different from each other on this measure of learning (Fisher exact probability = .005). Again, it is important to note that (1) no child in the experimental group produced the novel word inappropriately and (2) of the seven children who produced the novel word appropriately, six did so spontaneously and the other compre-

\(^1\) The first half of the subjects (12 experimental subjects, 12 control subjects) saw the toys on a window sill out of reach but in view. Because this procedure caused some behavioral problems, the plastic box was used for the second half of the subjects. As these two groups of children were identical in their performance on the tests of learning, they were not distinguished in any further analyses.
hended it correctly in addition to producing it in the elicited production task. There is thus no child for whom the sole evidence of word learning is elicited production.

As a final comparison between the experimental and control groups, subjects were classified as either learners or non-learners based on whether they were successful in the comprehension task and/or produced the word appropriately (shown in Table 3 as "Any Learning"). Eleven experimental subjects showed evidence of some form of learning, whereas only four control subjects showed such evidence. The groups were significantly different, $\chi^2 = 4.75, p < .02$. No differences were found between learners and non-learners on the basis of gender, birth order, or vocabulary size.

**Control analysis.**—During the play period in both the experimental and control conditions, the target object was always the last one presented. Whereas the control condition described above controlled for recency in that comparisons in both groups were based on the rate of selection of the final object presented, there existed the possibility that the combination of recency and exposure to the novel word gave some advantage to children in the experimental group. We thus included an additional control for the effects of recency and word exposure. In this condition, 12 additional children played with three adults with all four objects in turn. These children ranged in age from 1-1.25 to 2-1.10 ($M = 2.020$) and had means of 68.0 (SD = 33.0) and 36.8 (SD = 15.42) on total vocabulary and noun vocabulary, respectively.

The objects were placed in the transparent box, and then children heard the experimenter and their mother exclaim, "Look, I see a gazzer! A gazzer! I see a gazzer in there!" Only one of these 12 subjects later chose the last object played with when asked to "find the gazzer" in the comprehension test (this is significantly different from the experimental subjects' performance, Fisher exact $p < .05$). Thus, in both control groups there appeared to be a tendency (although not statistically significant) away from choosing the last object presented; only five of the combined 36 control subjects chose the most recent object in the comprehension test whereas nine (25%) would have been expected to do so. The performance of the experimental group is therefore all the more compelling because it appears these children may have had to overcome a bias in order to show evidence of word learning.

**Discussion**

These results suggest that 24-month-olds can use novelty to the discourse context from the adult’s perspective as a cue in learning a novel object label. As in Study 1, procedural factors other than newness to the discourse context that might have differentially enhanced the target object (e.g., playing with it last) are ruled out by the performance of children in the control groups. Also as in Study 1, it is very possible that control children identified the object that was new to the adult at the time the adults first saw it and became excited; indeed, E1 tried to ensure that all subjects—experimental and control—noticed that their parent was not in the room and could not see the last object they played with. But the control subjects had no reason to associate the novel word—heard later in another context—with that object; thus, any enhancement of the target object that might have occurred when E1 and the child were alone did not influence the control subjects to choose that object in the subsequent comprehension test. The experimental subjects, on the other hand, clearly identified the element in the situation that was new for the adults, but they understood in addition that the new word the adults were using was being used for that new thing. These results thus demonstrate not only that children are sensitive to what is experientially new for an adult in a given situation but also that they understand that adults are likely to talk about things that are new to them in that situation—a basic principle of the pragmatics of language use.

In contrast to Study 1, the egocentric explanation is not possible in this study. The target object was not new to the children at the time of the language model, and no other cues served to make it stand out for them. Both of the two nonegocentric interpretations of how the novelty of the target object (from the adults’ perspective) might have
ailed the children in attaching the label to it are still viable, however. It is possible that the children could have ruled out the nontargets as potential referents of the novel word because they had seen E2 and their parent play with these objects without labeling any of them; thus, they could have attached the word to the appropriate referent by a process of elimination. Alternatively, they might have registered the fact that the adults did not see the target object and they knew that adults tend to get excited about and talk about new things; both of these pieces of information would have enabled them to associate the new word with the target object. These two explanations are not mutually exclusive, and, in any case, they both imply some understanding on the part of the children of which object was new to the adults. Again the fact that only about half of our experimental subjects learned the word is most likely due to the single exposure episode, but it may also be the case that this is an emerging skill for 24-month-old children.

These findings are consistent with a number of recent studies showing that young children are able to learn words in a wide variety of pragmatic contexts. The situations simulated in these studies—situations in which there are a number of potential referents present—are presumably common in the lives of children just beginning to learn language. In these potentially ambiguous situations, however, children accurately pick out adults’ intended referents by using pragmatic cues such as adult gaze direction (Baldwin, 1993); affective cues indicating the fulfilling or thwarting of an adult’s announced intention ( Tomasello & Barton, 1994; Study 4); behavioral cues associated with intentional versus accidental actions ( Tomasello & Barton, 1994; Study 3); and knowledge of what is likely to happen next in a situation based on previous experience ( Akhtar & Tomasello, in press—a). The current study adds to this list children’s understanding of what is new in the discourse context from the adult’s perspective.

The findings of these studies have important implications for theories of word learning. In the way in which the problem of lexical acquisition is most commonly posed, the child’s task is to discover the adult’s intended referent from a theoretically infinite set. To reduce the possibilities, Markman (1989, 1992) has proposed the Whole Object and Mutual Exclusivity assumptions. According to this view, young children initially assume that a new word refers to a whole object that does not already have a name. In the current studies, however, such assumptions could not help children as they were confronted with four potential referents, all of which were whole objects and all of which were nameless. In such situations, they must rely on some pragmatic cue to tell them which one of the nameless objects the adult is talking about. In the current studies, they could not do this using some simple, easily programmable cue such as adult gaze direction because gaze direction was not diagnostic. Instead, children in these studies were using a cue, discourse novelty, which depended on their understanding of the entire situation as it unfolded over time. Specifically, they had to be sensitive to what they and the adults had already experienced, and they had to know that adults tend to use language to comment on new things. Thus, in the current studies, and in the studies cited above, 24-month-old children demonstrate an ability to use a broad range of pragmatic cues in determining adults’ referential
intentions in a wide variety of discourse situations. This ability indicates a deep and flexible understanding of the behavior of other persons and their referential intentions. In our view, it is this understanding that forms the foundation of the process of language acquisition (Tomasello, 1992).

We thus would argue that young children know more about the behavior and cognition of other persons than previously believed. They may not have an adult-like “theory of mind” in the sense of an explicit understanding of the thoughts and beliefs of others. For example, our 2-year-old subjects may not be aware that speakers sometimes talk about things that they believe to be new for others. However, 1–2-year-old children understand a great deal about other persons in terms of their attention and intentions (Baron-Cohen, 1993; Tomasello, 1995; Tomasello, Kruger, & Ratner, 1993); indeed, language acquisition would not be possible without such understanding (Akhtar & Tomasello, in press—b; Bruner, 1983). Situations such as those constructed in the current study highlight this social understanding and demonstrate how children use it to learn linguistic conventions from others.

References
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