Acquiring Proper Nouns for Familiar and Unfamiliar Animate Objects: Two-Year-Olds' Word-learning Biases

D. Geoffrey Hall

Harvard University

Upon hearing a new word for an object, children must decide whether it is a proper noun that refers to the individual (e.g., "Garfield") or a count noun that refers to a kind of object of which the individual is a member (e.g., "cat"). To make this decision, children may rely on two cues that signal when a proper noun, rather than a count noun, is being used to pick out an object. The first of these cues is semantic: properties of certain kinds of objects make them good candidates for receiving proper nouns. The individuality of the members of many kinds of animate objects, like people and pets, is important, but the individuality of members of other kinds, such as pencils or socks, is not. A second cue is syntactic: certain linguistic markers make some words better candidates for being proper nouns. In English, proper nouns typically are not preceded by determiners (e.g., we say "Garfield"), whereas count nouns may be preceded by determiners (e.g., we say "a cat" or "the pet").

Previous research has shown that 2-year-old children are sensitive to both semantic and syntactic cues in deciding whether a novel word applied to an object is a proper noun. In a seminal study by Katz, Baker, and Macnamara (1974), 2-year-olds heard a novel word for a familiar object (i.e., an object for which they likely knew a count noun for the kind). The word was modeled as a proper noun (e.g., "This is Zav") or as a count noun (e.g., "This is a zav"), and the object was either a doll or a block. In the first phase of the study, children saw two objects, and heard one of them labeled. Children then performed a series of actions with "Zav" or "a zav," including feeding the doll or putting the block in a house. Katz et al. inferred children's interpretation of the new word from the proportion of times children chose the named object when performing the various actions. A consistent use of the named toy led Katz et al. to infer that a child had made
a proper noun interpretation. Random choosing between the toys was viewed as consistent with a count noun interpretation.

Katz et al. (1974; with additional data reported in Macnamara, 1982) found that their 2-year-old girls, but not boys, used both semantic and syntactic cues in interpreting the new words. Specifically, they found that the syntactic form of the word (the presence or absence of a determiner) affected girls' selections for the dolls, but not for the blocks. Girls who were taught a proper noun for a doll frequently selected the named doll (on 71%-75% of trials). When taught a count noun for a doll, girls chose randomly between the two dolls, showing a response pattern that is consistent with a count noun interpretation. Girls who learned either a proper noun or a count noun for a block chose randomly between the two objects. Katz et al. (1974) interpreted their results as showing that very young children know that the individuality of members of certain kinds (e.g., dolls) is important, and that this individuality is marked linguistically in a particular way (i.e., through the use of proper nouns).

Gelman and Taylor (1984) replicated the results from Katz et al. (1974) in a study that differed in several ways. First, they tested subjects who were, on average, 6 months older than those in the Katz et al. study. Gelman and Taylor also elaborated and standardized the test procedure in several important ways. The change most relevant to the present work was that Gelman and Taylor used unfamiliar toys (i.e., toys for which children likely knew no count noun for the kind). They pointed out that the children in the Katz et al. study probably already had known that the objects were called "dolls" or "blocks." By switching to objects for which children knew no kind term, Gelman and Taylor wanted to eliminate the possibility that children would be confused because of a preference to reject a new label for an object with a known label.

With these changes to the procedure, Gelman and Taylor (1984) replicated the Katz et al. (1974) findings by showing again that for surrogates of animate objects (now unfamiliar stuffed animals), children (now both girls and boys) frequently made a proper noun interpretation of a word modeled as a proper noun. On 69% of trials, children selected the named object. Also consistent with the Katz et al. finding, children made a count noun interpretation of a word modeled as a count noun for one of these stuffed animals; that is, they selected randomly between the two members of the named kind. For the inanimate toys, children did not make a proper noun interpretation in either syntactic condition.

The results from the Gelman and Taylor (1984) and Katz et al. (1974) studies suggest that 2-year-old children should tend to interpret novel words as proper nouns when they are applied to either familiar or unfamiliar objects, provided the words are (1) applied to animate objects and (2) marked syntactically as proper nouns. However, other recent experimental results have shown that familiarity influences children's interpretations of a novel word applied to an object. Specifically, there is evidence that children are more likely to respect syntactic cues to meaning when interpreting novel words for objects that are familiar (i.e., objects for which they know a count noun for the kind) than when they are unfamiliar (i.e., those for which they do not).

Familiarity effects in word learning.—The discussion of familiarity effects in word learning can be broken down into an examination of two biases that appear to guide children's interpretations of novel words. The first of these is the object-kind bias, and it concerns children's interpretations of novel words applied to unfamiliar objects. Several researchers have presented evidence that young children expect a novel word applied to an unfamiliar object to refer to a kind of object, rather than to a set of objects having something else in common, such as a thematic link, a color, a substance, or a part (e.g., Baldwin, 1989; Landau, Smith, & Jones, 1988; Markman & Hinchen, 1984; Markman & Wachtel, 1988; Soja, 1990; Soja, Carey, & Spelke, in press; Waxman & Gelman, 1986). A typical finding from this research is that young children extend a novel count noun applied to an unfamiliar object to other objects of the same kind. An important question raised by this work is whether children initially hypothesize that a count noun applied to an unfamiliar object refers to a particular attribute such as shape (e.g., Landau et al., 1988) or whether they think that the word refers to a kind of object that may be independent of shape (see Soja et al., in press). Much of the evidence to date is consistent with both possibilities.

Some of the strongest demonstrations of the object-kind bias have come from studies that show that it operates irrespective of the
grammatical form class of the novel word and is, therefore, not restricted to the learning of count nouns. For example, Soja et al. (in press; also Soja, 1990) present evidence that suggests that young word learners (2-year-olds) will override syntactic evidence when interpreting words of differing syntactic form applied to unfamiliar objects. These authors showed that 2-year-olds' interpretations of novel words for unfamiliar objects did not differ, whether the syntax suggested a count noun interpretation ("This is a bicket"), a mass noun interpretation ("This is my bicket"), or either such interpretation ("This is my bicket"). Under all syntactic conditions, children interpreted the words as referring to a kind of object.

Whereas the object-kind bias proposes that young children prefer to interpret novel words applied to unfamiliar objects as referring to a kind of object, another proposed bias concerns children's interpretations of words applied to objects for which a word is already known. Argued to be a feature inherent in language design, the contrast principle posits that different words mean different things. Clark (1983, 1987, 1988) has suggested that this principle provides an important source of constraint on children's word meaning hypotheses during lexical acquisition. Expecting that no two words will have the same meaning, children should interpret a new word applied to an object differently than any previously learned word for the object.

The contrast bias hypothesis has generated some controversy (e.g., Gathercole, 1987). Much of this controversy stems from research showing that children are willing to apply two words to the same object or small group of objects. As Clark has pointed out, however, it is impossible to determine in many of these putative counterexamples whether the word learner thinks the two words denote kinds with identical or merely overlapping sets of members. If the denotations were merely overlapping, then contrast would not be violated (see Clark, 1988, 1990; Gathercole, 1987, 1989, for interesting dialogue on issues surrounding the contrast bias). In addition, Clark has summarized the sizable body of evidence in support of contrast. Some of this evidence comes from findings that children will preempt an innovative regularization (e.g., brought, comed) when they subsequently learn the conventional form (e.g., brought, came). Other evidence in support of contrast has emerged from experiments with young word learners, and two recent examples are particularly relevant to the present research.

First, Taylor and Gelman (1988) have demonstrated that 2-year-olds will interpret a novel count noun for an object differently, depending on whether the referent object is unfamiliar (i.e., has no known kind term) or familiar (i.e., has a known kind term). Children saw a set of four objects, including two from a single kind. One member of this pair was labeled with a count noun. When the labeled object was unfamiliar (a monster), children interpreted the word as referring to a kind of object, consistent with the object-kind bias; that is, they extended the novel count noun to both objects of the same kind. When the object was familiar (a dog), however, children seemed to interpret the word as referring to a subordinate kind of object; in other words, they restricted application of the novel count noun to the named member of the pair only.

Following up on this work, Taylor and Gelman (1989) found evidence to support their claim that children had interpreted the count noun for a familiar object as a subordinate kind term. These follow-up studies were similar in method to the earlier studies, but now the authors varied the similarity of the pair of familiar objects of the same kind. Half the children saw a pair of similar exemplars (two dogs, both terriers); half saw a dissimilar pair (two dogs, one a terrier, one a basset hound). The principal finding was that when the label was applied to a member of the similar pair, children readily extended the new count noun to both objects; when the label was applied to a member of the dissimilar pair, children restricted the new label to the named object only. Because children restricted their selections to the named object when the pair was dissimilar but not when it was similar, the authors argued that the children were making a subordinate kind interpretation of the novel count noun (presumably a specific kind of dog).  

Actually, the data are somewhat more complicated, because in a subsequent study (Experiment 3), Taylor and Gelman (1989) found that children restricted a novel count noun to the named object even when the two exemplars were similar (they were a male and a female polar bear). The authors ruled out the possibility that gender was being treated as a subordinate kind distinction (Experiment 4), but they admitted some surprise at the discrepancy between the findings of their Experiments 1 and 3.
A second source of experimental evidence consistent with contrast comes from Markman and Wachtel (1988), who found that 3-year-olds made different interpretations of novel labels depending on whether the labeled objects were unfamiliar (i.e., had no known kind terms) or familiar (i.e., had known kind terms). These authors demonstrated that the children would override clear syntactic cues in order to interpret the first word for an unfamiliar object as referring to the kind of object, again consistent with the object-kind bias. Children who heard "See this? It's pewter" applied to an unfamiliar object (pewter tongs) often interpreted the word as an object kind term by extending the word to other tongs (not made of pewter). Those children who learned the new label for a familiar object (i.e., a cup), however, used the syntax appropriately to interpret the word as referring to the kind of substance the object was made of. The Markman and Wachtel (1988) results are, in fact, consistent with a more stringent version of the contrast bias called the mutual exclusivity bias. The mutual exclusivity bias proposes that children will avoid allowing not only two words with the same meaning for a single object but also two kind terms for the same object. Because children in Markman and Wachtel (1988) avoided interpreting a second word for an object with a known kind term as another kind term, the results support the mutual exclusivity bias (see Au & Glusman, 1990, for discussion of this bias).

The preceding results suggest that there is indeed a familiarity effect in word learning. Young children expect a novel word learned for an unfamiliar object to refer to a kind of object, even if this interpretation is not consistent with the word's syntactic form (Soja, 1990; Soja et al., in press). When the object is familiar (i.e., children already know a kind term for the object), the object-kind bias no longer guides children's interpretation and, according to the contrast bias, they seek an alternative meaning for the novel word. Among other possibilities, this interpretation may be a different kind of object (e.g., a subordinate kind) if the word is marked syntactically as a count noun (Taylor & Gelman, 1988, 1989), or it may be a substance or property if the word is syntactically a mass noun or an adjective (Markman & Wachtel, 1988).

A familiarity effect in the acquisition of proper nouns?—Because there appears to be a familiarity effect in acquiring count nouns (Taylor & Gelman, 1988, 1989) and mass nouns (Markman & Wachtel, 1988), there is reason to suspect that there is also a familiarity effect in acquiring proper nouns. As noted earlier, however, the previous two studies of the acquisition of proper nouns have demonstrated 2-year-olds' sensitivity to both semantic and syntactic cues when the referent objects are either unfamiliar (Gelman & Taylor, 1984) or familiar (Katz et al., 1974). Unfortunately, comparing the results of the two studies directly is problematic because the subjects differed in mean age and the procedures were not identical. A direct comparison of the acquisition of proper nouns for unfamiliar and familiar objects, therefore, would be revealing. Specifically, if a novel proper noun were applied to an unfamiliar animate object, children might be biased to interpret the word as referring to a kind of object even though the syntax called for a proper noun interpretation (according to the object-kind bias). If a novel proper noun were applied to a familiar animate object (i.e., one for which a count noun for the kind were known), however, children might (according to the contrast bias and also the mutual exclusivity bias) assume that the word did not refer to a kind of object, and be more likely to interpret it appropriately as a proper noun referring to a unique individual.

To test directly for such a familiarity effect in 2-year-olds' learning of proper nouns, two studies were designed. As noted earlier, the two previous proper-count noun studies found children had a clear tendency to make proper noun interpretations only when the stimuli were (surrogates of) animate objects and when the words' syntactic frames called for a proper noun interpretation (e.g., "This is Zav"). In light of these findings, the following studies compared the interpretation of novel proper nouns for animate stuffed objects differing in familiarity.

**Experiment 1**

**Method**

Subjects.—Thirty children from preschools serving middle- and upper-middle-class families participated, 15 boys and 15 girls (2-3 to 3-0; mean age 2-8). Ten children were assigned to each of three conditions, with approximately equal numbers of boys and girls.

Materials.—In each condition, four stuffed toys were used. In the Unfamiliar condition, the toys were selected so that the children would know no kind label for either member of the pair from which the to-be-labeled toy would be selected. There were
two unfamiliar monster-like animals and two
distractor creatures, each approximately 4
inches high. The monster-like animals came
from a collection of toys called “Cuddlee
Uglees,” were covered with blue fur, had
blue arms and legs, and had large mouths
with teeth and a tongue sticking out. They
looked identical except for their dress,
which consisted of a hooded cape. These
garments were made of two distinct materi-
als: one was purple and black, the other was
white with thin lines of various colors. The
distractor items included one familiar ani-
mal (a yellow rabbit), and one unfamiliar
monster-like animal of a different kind of
Cuddlee Uglee (it was pink and blue with
yellow horns and a large green nose).

As an informal check that the children
knew no label for the unfamiliar toys, six 4-
year-old children saw the creatures and
were asked (1) whether they had ever seen
the things before and (2) whether they knew
what kind of thing the objects were. None of
the children admitted ever having seen the
toys before, and none volunteered a kind
term for the toys. These findings provided
reassurance that the 2-year-olds in this study
likely knew no kind term for the objects.

The purpose of the naming portion was
to teach the children a novel proper noun for
a toy. First, the box was placed in front of
the child, and one of the four toys was re-
moved and shown to the child. The experi-
menter used only the word “this” or “this
one” to refer to the object. The experimenter
then labeled the monster with a proper noun
in the following manner: “See? This is Zav.”
The child was asked to repeat the label, and
the experimenter then repeated the label at
least five times while the child played with
the toy (e.g., “Look at Zav,” “Let’s put Zav
on the ground here”).

In the Familiar condition, one of the two
cats was shown, and the experimenter then
followed the same procedure as in the Unfa-
miliar condition.

The Familiar—Explicit condition was
the same as the Familiar condition, with one
exception. Instead of referring to the cat as
“this” or “this one,” the experimenter used
the basic-level count noun to refer to the ob-
ject: “this cat,” “this kitty,” or “this kitty-
cat.” (The form of the label that the experi-
menter used to refer to the object was varied,
as appropriate, to agree with any label the
child might have produced spontaneously.)

The difference between the Familiar and
Familiar—Explicit conditions provided a
way to examine the role of explicitly men-
tioning the familiar basic-level count noun
in children’s tendency to interpret the novel
word as a proper noun.

The purpose of the testing portion of the
session was to determine children’s inter-
pretation of the novel proper noun. To begin
the testing portion, the experimenter told
the child that he had some other things that
he wanted the child to see. In random order,
the three remaining toys were removed from
the box and placed in front of the child. The
experimenter then asked the child to carry
out a series of 10 simple actions. Six of these
actions were designated as test trials. On
these trials, the experimenter asked the
child to choose an object in response to a
request that included the new name (e.g.,
“Can you put Zav behind your back?”). On
the four remaining filler trials, the experi-
menter told the child which object to handle.
Each of the four toys was used once as a filler item. The use of filler trials decreased the likelihood that children would select a toy simply to handle it, and it removed the focus of the task away from the named toy. After the final trial, the experimenter pointed to each toy in a random order and asked the child, "Is this Zav?" (using the name the child had learned).

The novel nouns used, the order of actions, and the member of the pair of objects that was labeled were balanced across subjects. The four novel labels were: "zav," "wug," "glord," and "dax." The 10 actions were: put behind the back, put in the box, hold in hand, give to experimenter, put on top of head, throw in the box, turn upside-down, drop, bug, and point to. All the children knew how to carry out these simple actions. Trials were designated as "tests" or "fillers" with the constraint that no more than two consecutive questions be of the same type. Children could easily reach all four toys at all times during the task. Children's choices on each trial were recorded. The sessions were audiotaped for later transcription of children's spontaneous comments.

Results and Discussion

Each child received three scores to reflect the number of test trials (out of a total of six) on which the child chose (a) the named toy, (b) the other toy of the same kind, and (c) one of the distractor items. Table 1 presents the mean results.

The first analyses focused on the numbers of selections of the named toy. There were no sex differences in any group in terms of these numbers. A one-way ANOVA with condition (Unfamiliar, Familiar, and Familiar—Explicit) as a between-subjects factor was then conducted, using the numbers of selections of the named toy as the dependent measure. The condition effect was significant, $F(2,27) = 4.76$, $p < .025$. Two planned contrasts were computed. The first showed that children were reliably more likely to have selected the named toy in the Familiar ($M = 5.20$ times out of 6, or 87%) than in the Unfamiliar ($M = 3.90$ times out of 6, or 65%) condition: $F(1,27) = 5.56$, $p < .05$. The second contrast revealed that children selected the named toy in the Familiar condition as often as in the Familiar—Explicit condition ($M = 5.50$ times out of 6, or 92%); the difference between these conditions was not reliable.

How do the results using this dependent measure compare to those from earlier studies of the acquisition of proper nouns? The results from the Unfamiliar condition were similar to those obtained by Gelman and Taylor (1984) in the analogous condition of their study; for the Familiar condition, the results showed even more frequent proper noun interpretations than reported by Katz et al. (1974) in the relevant condition of their experiment. The fact that children in Katz et al. (1974) were, on average, 8 months younger (and presumably less sensitive to the syntactic cues to proper nouns) than the children in this study offers a possible explanation of this difference.

<table>
<thead>
<tr>
<th></th>
<th>Named Toy</th>
<th>Other Kind Member</th>
<th>Outside Kind</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment 1:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unfamiliar condition ($n = 10$)</td>
<td>3.90 (1.29)</td>
<td>2.00 (1.16)</td>
<td>.10 (.32)</td>
</tr>
<tr>
<td>Familiar condition ($n = 10$)</td>
<td>5.20 (1.32)</td>
<td>.80 (1.32)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Familiar—Explicit condition ($n = 10$)</td>
<td>5.50 (1.08)</td>
<td>.50 (1.08)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td><strong>Experiment 2:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unfamiliar condition ($n = 10$)</td>
<td>3.70 (1.57)</td>
<td>2.00 (1.49)</td>
<td>.30 (.68)</td>
</tr>
<tr>
<td>Familiar condition ($n = 10$)</td>
<td>5.40 (1.27)</td>
<td>.60 (1.27)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Familiar—Explicit condition ($n = 10$)</td>
<td>5.30 (1.16)</td>
<td>.50 (1.08)</td>
<td>.20 (.63)</td>
</tr>
</tbody>
</table>
to pick out individuals. A person cannot be said to be using “Garfield” as a proper noun if the person uses it some or most of the time to refer uniquely to Garfield, but on other occasions uses it to refer to other cats (who are not named “Garfield”). If these 2-year-olds had made a proper noun interpretation of the word in this study, then they should never have selected anything other than the named toy, assuming that they could discriminate between toys of the same kind. The discriminability of the two objects was controlled to a considerable extent between the familiar and unfamiliar conditions through the use of similar dress.

When children were classified in this way, two differences again were examined. First, whereas only two of the 10 children in the Unfamiliar condition chose only the named toy on all trials, seven of the 10 children in the Familiar condition selected only the named toy. This difference is significant by Fisher’s exact test, \( p = .035 \). Second, the numbers of children selecting only the named toy across all test trials did not differ reliably between the Familiar and the Familiar—Explicit conditions; seven and eight children, respectively, selected the named object only. Table 2 presents these data.\(^2\)

Children’s responses to the explicit yes-no questions posed at the end of the session did not reveal a clear distinction among conditions, consistent with Gelman and Taylor (1984). Only two children in the Unfamiliar condition answered these questions correctly, saying “yes” only to the named toy; six children in the Familiar condition responded correctly; and four did so in the Familiar—Explicit condition. By a Fisher’s exact test, the difference between numbers in the Unfamiliar and Familiar conditions fell short of being reliable, \( p = .085 \). By the same test, the difference between the Familiar and Familiar—Explicit conditions also was not reliable.

In summary, these results show that children were more likely to make a proper noun interpretation of a novel proper noun applied to an animate creature when the creature was familiar than when it was unfamiliar. The difference between Unfamiliar and Familiar conditions was reliable when the dependent measure was the number of selections of the named toy and also when the dependent measure was the number of children who focused exclusively on the named toy. The results also show that explicitly mentioning the basic-level count noun did not affect children’s tendency to select

---

**Table 2**

<table>
<thead>
<tr>
<th>Number of Trials</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfamiliar condition (n = 10):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Named toy</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other kind member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Outside kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Familiar condition (n = 10):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Named toy</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other kind member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Outside kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Familiar—Explicit condition (n = 10):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Named toy</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other kind member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Outside kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

---

\(^2\) Additional analyses revealed that children who selected the named toy on four or more trials out of six were exceeding chance (binomial \( p < .05 \)). Application of this criterion to these data revealed that nine subjects in the Familiar condition selected the named toy more frequently than chance; six subjects did so in the Unfamiliar condition. The difference between these numbers is not reliable by a Fisher’s exact test. Furthermore, there was no difference between the Familiar and Familiar—Explicit conditions, using this same criterion. In both conditions, nine children exceeded chance.
the named familiar toy; performance in the Familiar condition did not differ from that in the Familiar—Explicit condition. This result suggests that the familiarity of the referent object per se, rather than the familiarity coupled with explicit use of the basic-level count noun, accounted for the observed effect.

While these results are clear, two considerations suggest the usefulness of a follow-up study. First, it would be valuable to check that the effect obtained in Experiment 1 held up with new stimuli. In Experiment 2, new stuffed creatures were used. Second, it would be informative to examine the acquisition of proper nouns under different circumstances. It is true that the stimuli used in Experiment 1 were all animate surrogates and presumably good candidates for receiving proper nouns. However, it could be that very young children rely on the semantic cue that only friends or family members (people or pets) can receive proper nouns. It is thus possible that the children had been reluctant to learn a proper noun for one of the monster-like creatures because they failed to consider the toy as a potential pet. To address this concern in Experiment 2, a hand puppet introduced the named toy in both familiar and unfamiliar conditions as "a pet."

**Experiment 2**

**Method**

*Subjects.*—Thirty children from preschools serving middle- and upper-middle-class families participated, 15 boys and 15 girls (2-4 to 3-0; mean age 2-8). Ten children were assigned to each of three conditions, with approximately equal numbers of boys and girls. None had participated in the first experiment.

*Materials.*—In each condition, four stuffed toys were used. In the Unfamiliar condition, the toys again were selected so that children would know no kind term for either member of the pair from which the to-be-labeled toy was selected. There were two unfamiliar monster-like animals and two distractor creatures, each approximately 4 inches high. The monster-like animals were two members of the kind of "Cuddlee Ug-lee" that had been used as a distractor in the first study. They had pink bodies with blue hair, yellow horns, and bright green noses. They looked identical except for their dress, which consisted of hooded capes (with holes to allow the horns to stick through) of distinct colors and materials: one was dark brown, the other was white. The distractor items consisted of one familiar animal (an orange cat, used in Experiment 1, but no longer dressed), and an unfamiliar monster (one of the named monsters used in Experiment 1, but no longer dressed). The unfamiliarity of the monsters had been verified previously as described in Experiment 1.

In the Familiar and Familiar—Explicit conditions, toys again were chosen so that children likely knew a kind term for both members of the pair from which the to-be-labeled toy was selected. There were two dogs and two distractors. The dogs were grey with black spots and long brown ears, and they looked identical except for their dress, which again consisted of hooded capes of the same colors that were used to dress the unfamiliar monsters. The distractors were the same as in the Unfamiliar condition.

A shoebox again was used as a place to store the creatures during parts of the study and as a prop during some of the specific activities.

*Procedure.*—The procedure was the same as in Experiment 1 in all three conditions, with one exception. In all conditions, a hand puppet took the to-be-named toy from the box and introduced the toy to the child. The puppet said, "I have a pet. Would you like to meet my pet?" He then named the toy for the child exactly as in Experiment 1. In the Familiar—Explicit condition, he used the basic-level count noun "dog" (or "doggie" or "puppy-dog") to refer to the to-be-named dog. (Variations in the form of the label were determined as in Experiment 1.)

**Results and Discussion**

Children received three scores to reflect the number of test trials (out of a total of six) on which they chose (a) the named toy, (b) the other member of the same object kind, and (c) one of the distractor items. The mean results are presented in Table 1.

The first analyses were based on the numbers of selections of the named toy. No sex differences were found in any group in terms of these numbers. A one-way ANOVA was performed on the numbers of selections made of the named toy, with condition (Unfamiliar, Familiar, and Familiar—Explicit) as a between-subjects factor. The condition effect was reliable, $F(2,27) = 5.06, p < .025$. Two planned contrasts tested specific
hypotheses about the effect. The first showed that children were more likely to have selected the named toy in the Familiar (M = 5.40 times out of 6, or 90%) than in the Unfamiliar (M = 3.70 times out of 6, or 62%) condition, F(1,27) = 8.04, p < .01. The second demonstrated that children were as likely to have selected the named toy in the Familiar condition as in the Familiar—Explicit condition (M = 5.30 times out of 6, or 88%); there was no reliable difference between these conditions.

As in Experiment 1, the percentage of named toy selections in the Unfamiliar condition was similar to, although slightly lower than, the one reported by Gelman and Taylor (1984) in the analogous condition of their study. The Familiar condition results again were somewhat higher than those obtained by Katz et al. (1974) in the relevant condition of their experiment. As in Experiment 1, the fact that children in this study were about 8 months older, on average, than those in Katz et al. (1974) presents a possible explanation of this difference.

A more conservative coding of the data was performed. A criterion was adopted whereby children were classified as having made a proper noun interpretation if they selected only the named toy across all test trials. Again, two comparisons were of interest. First, only two of the 10 children in the Unfamiliar condition chose only the named toy across all trials, whereas seven of the 10 children in the Familiar condition selected only the named toy. This difference is significant by Fisher's exact test, p = .035. Second, in both the Familiar and Familiar—Explicit conditions, seven of 10 children selected only the named toy on all test trials. Table 3 presents these data.

As in Experiment 1, the numbers of children in each condition giving correct answers to the explicit yes-no questions (asked at the end of the session) were compared. Only one child answered the questions correctly in the Unfamiliar condition, whereas five children in the Familiar condition and five children in the Familiar—Explicit condition answered correctly. The difference between the numbers in the Unfamiliar and Familiar conditions fell short of significance according to a Fisher's exact test (p = .07). The results of the same test also showed no reliable difference between the Familiar and Familiar—Explicit conditions in terms of the number of correct answers given.

In this replication designed to test the hypothesis with new stimuli and to examine acquisition under different teaching circumstances, children were more likely to make a proper noun interpretation of a proper noun applied to an animal when the animal was familiar than when it was unfamiliar. A difference between Unfamiliar and Familiar conditions obtained when the dependent measure was the number of selections of the named toy and also when the dependent measure was the number of children who focused exclusively on the named toy. Knowing that the creature in the Unfamiliar condition could be labeled with the familiar superordinate kind term "a pet" thus did not remove children's tendency to interpret the novel proper noun as referring to a kind of object. This finding suggests that the object-kind bias is an expectation for a lower-level kind label, presumably a basic-level kind label (see Rosch, Mervis, Grey, Johnson, & Boyes-Braem, 1976), for an unfamiliar object. In addition, explicit mention of the basic-level count noun did not affect children's tendency to make a proper noun interpretation of the novel word applied to a familiar object. Performance in the Familiar and Familiar—Explicit conditions did not differ reliably.

Children's Spontaneous Comments

Children's spontaneous comments during the tasks provided a rich source of data. Children often made comments, especially when the toys were first all presented or when a particular toy was used on a filler trial. These comments were transcribed from tapes of the play sessions, and they were then pooled over the two studies. The patterns of occurrence of two types of comment corroborate the claims made in this article about children's interpretations of the novel words.

One type, to be called a count noun comment, involved a child's spontaneously and explicitly extending the novel label to

---

3 As in Experiment 1, children who selected the named toy on four or more trials out of six exceeded chance (binomial p < .05). Nine subjects in the Familiar condition selected the named toy more frequently than chance; five subjects did so in the Unfamiliar condition. The difference between these numbers fell short of being reliable by a Fisher's exact test: p = .07. Once again, there was no difference between the Familiar and Familiar—Explicit conditions, using this same criterion. In both conditions, nine children exceeded chance.
TABLE 3

NUMBER OF CHILDREN SELECTING THE NAMED TOY, THE OTHER TOY OF THE SAME KIND, AND THE TOYS OUTSIDE THE KIND ON 0 THROUGH 6 TRIALS IN EXPERIMENT 2

<table>
<thead>
<tr>
<th>Number of Trials</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfamiliar condition (n = 10):</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Named toy</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other kind member</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Outside kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Familiar condition (n = 10):</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Named toy</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other kind member</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Outside kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

the other member of the named kind, treating it syntactically as a count noun (e.g., by pluralizing it or by combining it with a determiner). These comments were particularly striking because all children had heard the word modeled only as a proper noun (e.g., “This is Zav”). Consider the following examples:

Girl, 2-5: Pointing to the other member of the same kind, then the named toy, she said, “Two zavs! Two zavs again! Two zavs!” Later asked to “put Zav in the box,” she responded, “Two zavs in the box. I want to put two zavs in the box!”

Boy, 2-4: Pointing to the other member of the same kind, he said, “That a dax!”

Girl, 2-9: Pointing to the other member of the same kind, she said, “That’s another zav! Two zavs!”

A second type of spontaneous comment, to be called a proper noun comment, revealed a proper noun interpretation of the label. It occurred whenever a child spontaneously and explicitly restricted the label to the named toy, for example, when the child pointed to the unnamed kind member and asked what it was called. Some examples follow:

Boy, 2-11: When the other member of the same kind was brought out, he touched it and asked, “Who is this name?”

Boy, 2-10: He pointed to the unnamed member of the same kind and asked, “Who is this? Who is this?”

Girl, 2-5: After the labeling of the first toy, the second toy was brought out, and she asked, “And who’s that one?”

If children had treated the novel proper nouns equivalently in the Unfamiliar, Familiar, and Familiar—Explicit conditions, then these two types of comment should have been distributed equally in the three conditions. However, to the extent that the familiarity of the referent object affected sensitivity to the syntactic cues to proper nounhood, count noun comments should have been more prevalent in the Unfamiliar condition, while proper noun comments should have occurred more frequently in the Familiar and Familiar— Explicit conditions. In the Unfamiliar condition, seven children made a count noun comment, whereas only one made a proper noun comment; in the Familiar condition, two children made a count noun comment and five made a proper noun comment; in the Familiar—Explicit condition, no child made a count noun comment, but three made a proper noun comment. Two Fisher’s exact tests were carried out. The first showed a reliable difference between the distribution of comments in the Unfamiliar and Familiar conditions, \( p = .035 \). The second test revealed no reliable difference between the distribution of comments in the Familiar and Familiar— Explicit conditions, a result that is consistent with the earlier findings of no difference between children’s performance in these conditions.

General Discussion

Two studies examined 2-year-olds’ interpretations of novel proper nouns for sur-
The reliable difference between children's tendency to make a proper noun interpretation in the familiar and unfamiliar conditions also provides support for the claim that children expect word meanings not only to contrast (e.g., Clark, 1987) but also to be mutually exclusive (Markman & Wachtel, 1988). When children knew no kind term for the kind of object, they tended to interpret the word as referring to a kind of object. When children already knew a basic-level count noun for the kind of object (e.g., "cat"), they sought a different interpretation of a second word learned for such objects, namely, a proper noun. These results are consistent with previous experimental studies that support contrast (e.g., Taylor & Gelman, 1988) and mutual exclusivity (e.g., Markman & Wachtel, 1988).

The results showing that children restricted their selections to the named object in the familiar condition are indeed consistent with the claim that they were making a proper noun interpretation. However, an alternative interpretation, suggested by the results of Taylor and Gelman (1989), is that by limiting their selections to the named animal only, children were demonstrating a subordinate kind interpretation (e.g., some particular kind of cat in Experiment 1; some particular kind of dog in Experiment 2). This interpretation is unlikely. Recall the results from Taylor and Gelman (1989, Experiment 1). When two similar toys (two dogs from the same subordinate kind, differing only in clothing) were used as stimuli, children readily extended a novel label applied to one object to both objects. The authors concluded that this result suggested a subordinate level kind interpretation of the new label. When children restricted their selections to the named object, despite a high level of similarity between members of the pair, Taylor and Gelman (Experiments 3 and 4) interpreted the result as consistent with a proper noun interpretation. In the present studies, the stimuli were like Taylor and Gelman's similar exemplars (they were identical, from within the same subordinate kind), and children nonetheless restricted their selections to the named toy only. This fact suggests that children were making a proper noun, not a subordinate kind, interpretation of the label. Children's patterns of object selections, along with their spontaneous comments, thus support the contention that they were more likely to make a proper noun interpretation of the proper noun in the familiar than in the unfamiliar conditions.

As noted earlier, much research on lexical acquisition has examined young children's sensitivity to syntactic cues to the meaning of new words (e.g., Brown, 1957; Taylor & Gelman, 1988; Waxman, 1990; Waxman & Kosowski, 1990). This topic of research is important because syntactic information provides important semantic information for word learners and appears to be exploited by word learners from a young age. However, these and other recent results...
(e.g., Markman & Wachtel, 1988; Soja, 1990; Soja et al., in press) suggest that young children's sensitivity to syntactic cues may be affected by the familiarity of the referent object. Up to what age the object-kind bias exists such a strong influence on the interpretation of new words for unfamiliar objects is still unknown, as is how this bias affects young children's interpretations of new words under more naturalistic circumstances.

These results suggest that young children may err by interpreting proper nouns as count nouns in those circumstances in which a proper noun is being taught for an otherwise unfamiliar object. One frequently cited phenomenon that initially seems to offer support for this claim is young children's tendency to overextend the proper noun “Daddy” to include other men who are not their fathers (see Merriman, 1986, for discussion). However, a problem in interpreting this observation is that young children likely hear the word modeled both as a proper noun (e.g., “Say hi to Daddy”) and also as a count noun (e.g., “He's a daddy”) (Merriman, 1986). Furthermore, other evidence suggests that young children rarely err in their interpretations of proper nouns (see Macnamara, 1986). A challenging question for future research is thus to specify further the conditions under which young children will rely on syntactic cues to make appropriate interpretations of novel proper nouns and words from other syntactic categories.

References


This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.