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Children's interpretations of homonyms: a developmental study*

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ABSTRACT

The effect of homonymity on children's use of semantic context to derive word meaning was examined in two studies. Participants were presented with stories that included three types of key words: nonsense words, familiar words used accurately, and homonymous words. Thirty-two preschoolers aged 3;7 to 5;4, 32 second graders aged 7;1 to 8;8, and 16 college students in Study 1 indicated the keys words' meaning by selecting one of six possible illustrations per key word. In Study 2, 16 toddlers aged 2;9 to 3;3, 32 preschoolers aged 4;0 to 4;11, 32 second graders aged 7;0 to 8;11, and 32 fifth graders aged 10;1 to 11;8 indicated key word meanings either by enacting each story with paper dolls or by selecting one of six possible illustrations. Word type and age, but not response mode, affected children's interpretations. Children from all four age groups made fewer contextually based interpretations of homonymous words than of nonsense words. Fifth graders and adults made more contextually based (rather than literal) interpretations of homonymous words than did younger children. The results suggest that homonymity is a powerful inhibitor of children's tendency to derive a meaning for a new word from context.

INTRODUCTION

In order to understand lexical development, it is necessary to understand the influences on how children form hypotheses for a word's meaning. In the present studies, two sources of influence on a child's word interpretation

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were considered together: semantic context and homonymity. The principal question addressed in the studies was whether children use semantic information present in story context to derive a new word meaning for homonymous words. Only nominals were included in these experiments in order to avoid effects due to the form class of words, which has been shown to influence children's hypotheses for word meaning (Taylor & Gelman, 1988). Thus the studies were designed to examine homonymity's effect on how children associate referents with nominals, how children interpret a homonymous word for which the second meaning is unfamiliar, and the developmental changes that occur in the interpretation of homonyms in semantic context.

In order to examine how learning a homonym's secondary meaning is unique, it is important to consider the more typical word learning situation. When a child hears a new nominal, a number of possible referents exist that the child may associate with the word. The child's task is to consider which of these referents corresponds to the new word. The child hypothesizes possible word meanings, selects a referent, and eventually the spoken word becomes associated with a particular referent or class of referents. This signals the development of a lexical entry (which may be modified over time). Once a meaning for a word is learned, this entire sequence of 'hypothesizing' and 'selecting' a referent does not recur for every presentation of the word. Instead, the spoken word-referent association is accessed upon future presentations of the word in question.

Carey (1978) (see also Carey & Bartlett, 1978) has described word learning as beginning with a process wherein children 'clearly flag: *new word* upon hearing a phonological sequence with no current lexical entry' (p. 272). A frequent characteristic of a novel word is phonological unfamiliarity. However, a new word may be phonologically familiar to a child, and associated with a referent – as is the case with homonyms. If a child hears, for example, a request to 'retrieve the rose tray', how does the child determine that the reference is to a tray of a certain colour, and not to a tray decorated with a certain type of flower or to a tray shaped like a flower? The pre-existing word-referent association for the word 'rose' may influence whether the child considers additional hypotheses for the new word meaning, or whether the child even considers that the word 'rose' denotes a meaning other than rose, the flower. This possible source of conflict (between the familiar, primary meaning and the intended, secondary meaning) is unique to the learning of homonyms' secondary (or less familiar) meanings. Thus, in order to learn secondary meanings of homonyms, children need to (1) understand that a single word can denote more than one referent, (2) recognize that a word is referring to a novel meaning despite the phonological familiarity of the word and the familiar meaning already associated with the word, and (3) be able to use context to induce the second meaning.

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There is strong evidence that preschool age children are able to derive word meaning from various forms of context, including situational (Chomsky, 1969; Grieve, Hoogenraad & Murray, 1977; Warden, 1981) and syntactic (Taylor & Gelman, 1988) context. However, Campbell & Bowe (1977) showed that three- to five-year-olds' word interpretations of homonyms are not always influenced by semantic context. When presented with a homonym that referred to its less familiar meaning, the children in their study ignored the contextually presented semantic information about 31 % of the time and relied instead on meanings that would be considered 'literal' in light of the homonym's more familiar, or primary, meaning. For example, when asked to draw a picture of a 'wing' of a castle, children depicted the wing as similar to that of a bird or airplane. More recently, Beveridge & Marsh (1991) have demonstrated that elaborate linguistic story context decreases the likelihood that a young child will make such literal interpretations of homonyms. However, despite this influence, the majority of four-year-old children in their study presented with homonyms in story contexts still interpreted the homonyms in view of the words' primary meanings. The implication drawn from these studies is that the effect of homonymity may override the influence of semantic context on deriving word meaning.

Acquiring secondary meanings of homonyms

In the case of homonyms, the word meaning is new but the word itself is familiar and associated with a referent. It is not surprising, then, that a child would access a previously established word-referent association when presented with a homonym. Three possibilities may then occur: (1) The child may accept the primary meaning of the word and progress no further. This possibility is consistent with the performance of the three- to five-year-olds in Campbell & Bowe's study who interpreted homonyms 'literally'. (2) The child may accept the primary meaning of the word, yet may also experience a conflict between this meaning and the meaning intended by the context, but cannot work toward solving this conflict. (3) The child, upon being aware of the conflict between the primary and intended meanings, may generate alternative hypotheses for a new, secondary meaning. Each of these three possibilities demonstrates how homonyms may influence the course followed by a child in establishing a word-reference association (i.e. acquiring a word's meaning).

Lexical access for ambiguous words

Models of how context influences lexical access have been investigated with respect to adults' interpretation of homonyms and other forms of lexical ambiguity. (See Simpson, 1984, for a review.) The questions addressed by

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these models include whether semantic context constrains which meaning of an ambiguous word is accessed; whether all existing meanings of an ambiguous word are accessed and evaluated in light of the semantic context; or whether meanings of an ambiguous word are accessed in the order of their frequency of occurrence in language, with the most frequent meaning accessed first, and subsequent meanings accessed only after the unsuccessful matching of a previously accessed meaning with the context. The underlying assumption in these models is that each possible meaning for an ambiguous word already exists in the listener's lexicon.

There must be a point in lexical acquisition during which a secondary meaning for a homonymous word has not yet been ACQUIRED. In order to examine how children access multiple meanings for one word, it is necessary to understand how, and under what circumstances, new meanings for homonymous words are acquired. More specifically, we must come to understand how a theory of lexical acquisition accounts for the acquisition of homonymous word meanings. Processes have been described as to how a child, when assigning a new label to a familiar object, must be able to consider existing meanings for both the new and old labels simultaneously (Merriman, 1986; Clark, 1987, 1988; Markman & Wachtel, 1988). This ability does not guarantee that the child will modify the meaning for the old label, nor is it necessarily present among children who are only beginning to acquire language. Perhaps it is also the case that preschoolers employ a rule that one word can only refer to one object (e.g. 'pen' refers to a writing/drawing instrument and therefore cannot refer to a cage-like object). Just as children – at one point in development – may not be able to consider two labels for one referent simultaneously, perhaps they do not consider two meanings for one word. Indeed, Slobin (1985) has described children's resistance to associate more than one meaning with one word.

The possible effect of homonymity (specifically of the pre-existing familiar meaning) on children's word interpretation was investigated in the two present experiments. Although of greatest interest was how children acquire the secondary meanings of homonyms, the use of existing homonyms in this study would have eliminated the experimenter's control over word familiarity. For example, the correct interpretations of the homonyms presented to the children in the Campbell & Bowe (1977) and Beveridge & Marsh (1991) studies could have resulted from the children's prior experience with the homonyms' secondary (less familiar) meanings, despite greater familiarity with the primary meaning. To avoid this possibility, 'pseudo-homonyms' were used to mimic a child's FIRST encounter with a homonym's secondary meaning; familiar non-homonyms were used to refer to novel referents (e.g. the word 'rope' was used to refer to a shovel). As ridiculous as a statement such as 'push the sharp rope into the ground' may sound, this statement sounds no less anomalous to a child than does the word 'stake'

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when the child first hears, 'push the sharp stake (steak) into the ground'. If a child hearing the latter sentence interprets the key word (stake) to mean a sharp, stick-like object, we cannot infer that context alone influenced the child's interpretation: prior exposure to the word stake may have also had an effect. In contrast, if a child hearing the first sentence interprets 'rope' to mean a shovel, we can be more certain that contextual cues influenced the child's interpretation. The manipulation of word familiarity in this study involved the use of nonsense words used as *unfamiliar* key words, and 'pseudo-homonyms' as *familiar* key words.

Familiarity of referent

The effect of homonymity on a child's hypotheses for a new word's meaning may pertain to two sources of conflict that arise from reliance on a one-to-one-word meaning mapping rule, as described by Slobin (1985). One source of conflict occurs between the established meaning and the meaning intended by the context, and herein will be referred to as the CONFLICT BETWEEN MEANINGS. Unlike the conflict between meanings that occurs only when the new word sounds familiar, conflict WITH REFERENT LABELS can occur regardless of whether the new spoken word sounds familiar. The latter has been described by Clark (1987, 1988) and Markman and colleagues (Au & Markman, 1987; Markman & Wachtel, 1988) as the principle of contrast. It may occur when a referent is one for which an established label exists, and for which the child already has a label (e.g. 'ice-cream'). It has been shown that children are reluctant to use two labels (e.g. dog and animal) for one referent (Macnamara, 1982; Clark, 1987, 1988; Markman & Wachtel, 1988). However, it has also been demonstrated that children sometimes accept a new word for a previously labelled object (Merriman, 1986).

The effects of referent familiarity were not examined in the present study. However, in order to examine whether a conflict between familiar and new word meanings accounts for children's difficulty in acquiring homonyms' secondary meanings, it was necessary to control for the possible effect of conflict with referent label. This was accomplished by having identical referents to which the pseudo-homonyms and nonsense words referred, in different sets of stories. Moreover, all of the referents were objects familiar to young children (e.g. ice-cream, tree), and each was depicted by a coloured illustration. By controlling familiarity of referent across both types of word familiarity (pseudo-homonyms, i.e. familiar words; and nonsense, i.e. unfamiliar, words), any effect of homonymity could be attributed to the familiarity of the word itself, not to the familiarity of its referent. In summary, by including the nonsense words in addition to the pseudo-homonyms, it was possible to (1) control for the familiarity of the words being interpreted from identical stories, and (2) explore whether the conflict between meanings (for a familiar word which had a primary and a new

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meaning) affects children's interpretation of words independently of any effects of the conflict with referent labels.

The first study was carried out to examine whether children's and adults' use of context to interpret words would be affected by word familiarity (pseudo-homonyms versus nonsense words). Thirty-two preschoolers, 32 second graders, and 16 adults were presented with interpretation tasks involving these two types of key words. These participants were also presented with familiar words used accurately, in order to provide a check that the interpretation task used in the study was not too difficult for the children. On the basis of findings that understanding homonymity corresponds to conservation skills (Cramer, 1983) and that preschoolers are less aware of the nature of ambiguous messages than are older children (Markman, 1977), it was predicted that the preschoolers, but not the second graders or adults, would make literal interpretations of pseudo-homonyms. However, because the nonsense words would be unfamiliar to participants in all three age groups, it was predicted that context would be used by all participants to derive meanings for the nonsense words. This pattern of findings would support the conclusions that (1) children and adults alike are capable of deriving meaning from context; but that (2) preschoolers rely on their established word meanings when interpreting familiar words used in a novel manner (pseudo-homonyms), whereas second graders and adults rely on context for their interpretations of both types of words.

EXPERIMENT 1

METHOD

Participants

The participants included (1) 32 preschoolers (age 3;7 to 5;4, mean age 4;5) from one of two university laboratory preschools; (2) 32 second graders (age 7;1 to 8;8, mean 7;9) from one public elementary school; and (3) 16 adults enrolled in a college level Introductory Psychology class.

Materials

There were six stories coordinated with one book of illustrations. Each of these stories contained three key words, one each of three types: pseudo-homonyms, nonsense words, and familiar words (that were not homonymous) used accurately.

Composition of illustration book

For each story there were three pages of illustrations, one corresponding to each of the three types of key word. These pages were constructed from self-adhesive photograph album pages. Six 3 inch by 5 inch flash cards (colour

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illustrations, each of a single object) were inserted into each of these 18 pages. The 18 pages were put in a three-ring binder so that the order of the pages could be changed according to the story set used in a given session, as described below.

Each page of six illustrations corresponded to a story segment which contained one of the three types of key words. On each page, one of the six illustrations corresponded to the correct, intended meaning (i.e. the meaning consistent with the context); and a second illustration corresponded to an object that was indirectly related to the context. For example, for the story segment, 'then it was time for dessert, and Joey's mother took some (*key word*) out of the freezer and said, 'do you want a scoop of (*key word*) on your piece of birthday cake?' there was one illustration of a scoop of ice-cream, and the illustration of something indirectly related to the context depicted a bunch of grapes (e.g. something found in the kitchen). For the pseudo-homonyms, there was also one of the six illustrations corresponding to the key word's familiar (literal) meaning. The remaining illustrations (three for the story segments containing pseudo-homonyms, four for the story segments containing nonsense or accurately used words) were foils and were unrelated to the intended meanings. For instance, for the story segment described above, in addition to the illustrations of an ice-cream scoop and grapes, the unrelated illustrations included a pair of scissors, a nurse, a pan, and a tractor or a door (the latter for the pseudo-homonym condition).

The position of the correct illustration (i.e. the illustration corresponding to the intended meaning) was counterbalanced across the six trials for each key word category. In the pseudo-homonym condition, the position of the illustration that corresponded to the familiar meaning of the key word was also counterbalanced.

Key words

There were 18 key words, six falling in each of three categories: pseudo-homonyms, nonsense words, and accurately used words. The accurately used words were defined as familiar words presented with contextual information that was consistent with their true meanings. Accurately used words were included in the study in order to provide a check on whether the children understood the task of selecting an illustration which corresponded to a key word.

Each key word consisted of one syllable. The pseudo-homonyms and the accurately used words were chosen on the basis of their familiarity as rated by adults (Toglia & Battig, 1978). This was also the case for the nouns indicated by the intended meanings for the nonsense words and pseudo-homonyms. Each of these words received a score of 5·77–6·69 on a 7 point scale with 1 indicating least familiarity and 7 indicating greatest familiarity. A list of the key words and intended meanings appears in Table 1.

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TABLE 1. *Intended meanings and key words used in story settings in Experiments 1 and 2*

Key word category	Item	Intended meaning[a]
Pseudo-homonym	door	ice-cream or clown
	cake	hat or cage
	chain	scarf or kite
	boot	car or horn
	rope	hammer or shovel
	fork	flower or ball
Nonsense words	gler	ice-cream or clown
	slor	hat or cage
	flig	scarf or kite
	vlo	car or horn
	blus	hammer or shovel
	spef	flower or ball
Accurately used words	slide	slide
	tree	tree
	cloud	cloud
	drum	drum
	fence	fence
	rake	rake

[a] The intended meanings for nonsense and pseudo-homonym key words varied across the story sets.

Composition of stories

Each of the six stories contained three key words, including one from each key word category. The contextual information accompanying each word was presented within two sentences in which the key word was repeated twice. The contextual information always indicated a noun, although its most important function was to provide information regarding the meaning of the key word. This information referred to the function of the object denoted by the key word, and to physical features of that object. There were four semantic, contextual clues per intended meaning, presented within two sentences. (See Appendix for an example of one of the stories.)

Four sets of the six stories were formed by varying the respective positions of the nonsense word and pseudo-homonym within each story's format; thus in two of the sets an intended meaning was referred to by a nonsense word, whereas the same intended meaning was referred to by a pseudo-homonym in the remaining two sets of stories. Also varied across these four story sets was the order in which key word types appeared within each story. The same 18 key words and intended meanings were included in each of these story sets. Each subject heard all six stories, but any one subject heard only the versions from one of the four sets. (The Appendix includes one story as it appears in each of the four story sets.) The order in which key word types

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appeared within each story was counterbalanced within subjects. The six possible orderings of the three key word types were used, once each, for each subject.

Procedure

Each child was tested individually by the same female experimenter who invited each child to play a 'story game'. The experimenter emphasized that the game was a 'listening game', and that pictures of items in the stories would have to be found. The instructions that preceded the trials were as follows: 'This is a story game. I am going to read the stories from this book; see all of the stories in this book? There are lots of words, but there is something missing from this book. Do you see any pictures? There are no pictures in this book! That's because all of the pictures that belong to this book are hiding in this book (experimenter points to the illustration book). Some of the pictures in this book belong to these stories, but some do not. In this game, you will have to figure out which ONE picture is the picture that goes with the story. So, you will have to listen carefully to the stories. I'm going to read a little bit of the story to you, and then I'll show you some pictures and you'll have to find the picture that goes with the story. Even though there are lots of pictures on each page, only one picture is the picture of something in the story. After you find the picture, I'll read more of the story and you will find another picture. Listen very carefully to the stories.' At this point in the instructions, each child was given a warm-up trial. The experimenter read a portion of the story of Little Red Riding Hood, and asked the child to choose a picture of the flower in the story (that Little Red Riding Hood had picked for her grandmother).

Following the warm-up trial, the session began. The experimenter read one part of the first story, showed the child one page of six possible illustrations, and asked the child to 'look at all of the pictures on this page, then show me the picture of the (*key word*) in the story'. After the child responded the experimenter recorded the child's response, and the next story segment was read. This procedure was followed until all three story segments were read by the experimenter and responded to by the child. This three-segment structure held for each of the six stories read to the subject. The transition from one story to the next was marked by the experimenter's comments (e.g. 'Now I have another story. This one is about Becky.') to ensure that contextual information from a preceding story was not confused with the story that followed.

Scoring

A score of 1 point was assigned if a picture selection response was consistent with the semantic context. Thus, for each of the three categories of word type, a range of zero to six points was possible for any individual child.

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RESULTS

Scores from the accurately used words were not included in the ANOVAs due to an expected ceiling effect: 376 of the 380 interpretations of the accurately used words were correct. It can be concluded from these results that all the participants, including the youngest children, understood the nature of the task.

Grouped performance

Preliminary analyses were carried out to investigate the possible effects of story set and story order. All these analyses showed no significant main effects or interactions involving either of these factors. Therefore, story set and story order were omitted as factors in the subsequent analyses.

Of primary interest were the effects of key word type and age on the subjects' tendency to use context in interpreting the meanings of the key words. A 3 (age) × 2 (sex) × 2 (word type, nonsense words vs. pseudo-homonyms) ANOVA revealed that there were main effects for both word type, $F(1, 74) = 101{\cdot}89$, $p < 0{\cdot}0001$, and age $F(2, 74) = 63{\cdot}73$, $p < 0{\cdot}0001$. There was no main effect of Sex, $F(1, 74) = 0{\cdot}13$; nor were there any interactions involving sex. A significant interaction between age and word type was also found, $F(2, 74) = 2{\cdot}76$, $p < 0{\cdot}0001$. The mean numbers of correct responses are shown in Table 2.

TABLE 2. *Mean (and S.D.) number[a] of correct responses as a function of age and type of key word in Experiment 1*

	Type of key word		
Age group[b]	Accurately used	Nonsense	Pseudo-homonym
Preschoolers	5·94	4·31	0·81
Second-graders	5·97	5·62	3·56
Adults	6·0	5·94	5·19

[a] In each cell, the maximum possible number is 6.
[b] $N = 32$ except adult group where $N = 16$.

Tests of simple effects showed that nonsense words were interpreted significantly more accurately than pseudo-homonyms by the preschoolers, $F(1, 74) = 123{\cdot}04$, $p < 0{\cdot}0001$; and by the second graders, $F(1, 74) = 43{\cdot}36$, $p < 0{\cdot}0001$. The effect of word type was not significant for the adults, $F(1, 74) = 3{\cdot}15$. The effect of age was significant for both pseudo-homonyms, $F(2, 74) = 50{\cdot}69$, $p < 0{\cdot}0001$; and nonsense words, $F(2, 74) = 18{\cdot}02$, $p < 0{\cdot}0001$. Tests of contrasts showed that the preschoolers made significantly fewer correct interpretations of pseudo-homonyms than did the second graders,

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$F(1, 74) = 53{\cdot}79$, $p < 0{\cdot}0001$, who in turn made significantly fewer correct interpretations than did the adults $F(1, 74) = 13{\cdot}31$, $p < 0{\cdot}0001$. For the nonsense words there was a significant difference between the preschoolers and second graders, $F(1, 74) = 26{\cdot}79$, $p < 0{\cdot}0001$, but not between the second graders and the adults, $F(1, 74) = 0{\cdot}78$. Thus, although fewer preschoolers made correct interpretations of nonsense words than did second graders and adults, the latter two age groups did not differ in their use of context to interpret nonsense words.

Comparisons to chance performance

Although the children made significantly fewer correct responses to pseudo-homonyms than to nonsense words, it is important to examine how many children in each of the two age groups correctly interpreted pseudo-homonyms overall. The probability that any child would respond correctly to any one word interpretation task by chance is 0·1667, because a child was asked to choose one item from an array of six pictures (or six picture toys). A score significantly above what would be expected by chance would be four or more correct responses out of six (Binomial $p = 0{\cdot}0087$; the probability of making three or more correct responses is 0·062). For both the preschoolers and the second graders, the probability that two or more of the 32 children will make four or more correct responses is 0·028. Only one of the 32 preschoolers made four or more correct, contextually-based interpretations of pseudo-homonyms (see Table 3). Approximately half (18) of the 32 second

TABLE 3. *Number*[a] *of children making four or more correct interpretations, as a function of age group and type of key word in Experiment 1*

	Type of key word		
Age group	Accurately used	Nonsense	Pseudo-homonym
Preschoolers	32	23	1
Second graders	32	32	18
Adults	16	16	15

[a] $N = 32$ except adult group where $N = 16$.

graders performed significantly better than chance. All but one of the 16 adults performed at a level better than chance. These results illustrate how preschoolers, as a group, consistently failed to demonstrate any tendency to induce secondary meanings of homonyms. Adults were quite consistent in correctly interpreting homonyms. Second graders' performance was at a level intermediate to that of the preschoolers and the adults in that approximately half of these children consistently made accurate interpretations of homonyms and the remaining half consistently made incorrect

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interpretations. Thus half of the second graders performed like preschoolers, and half performed like adults.

DISCUSSION

The results from the first experiment show that word type has an effect on children's interpretation of a word's meaning. Specifically, preschoolers and eight-year-olds were less likely to use contextual information in interpreting pseudo-homonyms than they were when interpreting nonsense words; this effect was significantly stronger for three- to five-year-olds than for seven- to eight-year-olds. Although the effect of word type was evident for both age groups of children, it is worth noting that a sizeable percentage of the older children's interpretations of pseudo-homonyms (59%) were correct, rather than literal; whereas the vast majority (84%) of preschool children's interpretations of pseudo-homonyms were literal, rather than correct. Moreover, nearly all the incorrect interpretations of pseudo-homonyms were literal, across both age groups of children. Of the 244 errors made by the 64 children in this study, only 6 were not literal. (Of these 6, 5 were made by preschoolers and 1 was made by a second grader.)

The fact that 77 (40%) of the second graders' interpretations of pseudo-homonyms were literal was a surprising finding. Only 18 (56%) second graders performed better than chance across the six pseudo-homonym interpretation tasks. These findings suggest that the linguistic skills necessary for successful acquisition of new, secondary meanings of homonyms from limited semantic context are not firmly established for all seven- to eight-year-olds.

EXPERIMENT 2

The findings from Experiment 1 show a developmental sequence, but do not identify the age at which children consistently make accurate interpretations of pseudo-homonyms, as do adults. To address this question, a group of fifth graders was included in the second experiment. A group of two-year-olds was also included to examine whether the findings reported for preschoolers occur with younger children as well. As in Experiment 1, preschoolers and second graders were also included in the second experiment. None of the participants included in the second experiment had participated in the first experiment.

Experiment 2 was also designed to examine the potential influence of response mode on the interpretation of the words or referents used in Experiment 1. In addition to the 'select picture' condition that was used in the first experiment, a second condition was introduced in which children were required to act out their interpretations of the stories heard. On the basis of Markman's (1977) findings that children are unaware of the

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incomplete or erroneous nature of their knowledge for a procedure until asked to enact the procedure, it was hypothesized that enactment of the story interpretation should yield a more thorough evaluation of the story context by young children. Specifically, it was predicted that preschool and second-grade children in the 'act out' condition would make a significantly greater number of correct interpretations of pseudo-homonyms than preschoolers and second graders in the select condition. It was also predicted that the fifth graders would make significantly more correct responses, across both conditions, than the younger children; and that response mode would not influence their high rate of accuracy.

METHOD

Participants

Sixteen toddlers (age 2;9 to 3;3, mean 3;0), 35 preschoolers (age 4;0 to 4;11, mean 4;6), 32 second graders (mean age 7;7, range = 7;0 to 8;11 months), and 32 fifth graders (age 10;1 to 11;8, mean 10;8) were tested. Three of the 35 preschool children were omitted from the analyses due to technical error (no audio recording was made for these subjects during the videotaping of their sessions). One additional toddler (age 3;0) was not tested because he did not follow the instructions for the task. The toddlers and preschoolers attended one of two laboratory preschools at a large university. The second and fifth graders were recruited by letters delivered to several schools in a public elementary school district and to one parochial elementary school. These elementary school children were tested on the university campus in the same facility as the one used to test the preschool children.

In addition to the children in these four age groups, a supplementary group of 16 preschool children (age 4;1 to 5;11, mean 5;5) was tested in a 'no word' condition. This condition was included to examine (1) whether the contextual information (within stories) alone was sufficient to denote the intended meanings, and (2) whether word type effects were due to the actual presence of a particular type of word rather than to the nature of the task employed in this experiment.

Materials

There were six stories, each containing three key words, co-ordinated with one book of illustrations and with one book of 'picture toys', as is described below. The stories and the illustration book were the same as those used in Experiment 1. The 18 key words were the same key words used in Experiment 1.

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Composition of illustration and picture toy books

The illustration book used in Experiment 1 was also used in this study. In addition, a book of picture toys was composed. The latter was identical in format and in composition to the illustration book. However, the colour pictures from the illustration book were duplicated (by a chroma-copy colour photocopy procedure) and cut out from their background. These picture toys were then placed within plastic photograph sleeves. There were six picture toys per page, appearing in the same order as the pictures in the illustration book. All of the counterbalancing of position of illustrations, on and between the 18 pages, that was described for the illustration book (used in Experiment 1) was also used in this study. Thus the illustration book and the picture toy book were identical in format; however, it was possible to easily remove the cut out pictures only from the latter.

Design

Each of 112 children was tested individually by the same female experimenter who had tested children in Experiment 1. The 16 preschoolers in the no word condition were tested by two independent experimenters, one male and one female. All 16 of the children in the toddler age group were in the select picture condition. For the three older age groups, 16 children were in the select picture condition, and 16 children were in the act out condition. Toddlers were excluded from the act out condition because the additional task demands and time requirements would have presented too great a difficulty for these children.

Procedure

The instructions used in Experiment 1 were presented to all children. For children in the select picture condition, the procedure used was identical to that used in Experiment 1. A modified version of these procedures was carried out with the children in the act out condition. For the children in the act out condition, these additional instructions were presented: 'There is a special reason why you need to find the right picture that goes with the story. That's because the pictures in this (photograph) book are special; they are really picture toys! They come right out of the book, and you can play with them. After I read the story to you, you'll have to take the picture toy out of this book, and I'll give you some paper dolls of the people in the story so you can show me what they did in the story that I read to you.'

At the end of the instructions, each child was given a warm-up trial. The experimenter read a portion of the story of Little Red Riding Hood, and asked the child to choose a picture (or picture toy) of the flower in the story (that Little Red Riding Hood picked for her grandmother).

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The children in the act out condition were given a paper doll of a girl and told to 'pretend this is Little Red Riding Hood; show me what happened in the part of the story that I read to you.'

'*No word*' *condition*

The additional group of 16 preschool children was presented with the no word condition. The procedure was the same procedure as that described above, with the exception of the presentation of the key words. In fact, no key words were used in the stories or in the procedure. Instead, key words were replaced with the word 'thing' or 'something', and the children were asked to 'find the picture of the thing in the story'.

RESULTS

The results are examined with respect to the number of accurate interpretations children made of pseudo-homonyms versus nonsense words, and the effect of the 'act out' and 'no word' conditions. Also, the findings in this study were compared with the findings from the first experiment.

Accuracy of word interpretation

Preliminary analyses were carried out to investigate the possible effects of sex of subject, story set and story order. Consistent with the findings from Experiment 1, all these analyses showed no significant main effects or interactions involving any of these three factors. Therefore, these three factors were omitted in the subsequent analyses.

A 3 (ages) × 2 (word type) × 2 (conditions) ANOVA was carried out to investigate whether the number of accurate responses made by children in the act out condition differed significantly from the number of accurate responses by children in the select picture condition. (Only the children in the three older age groups were included in this analysis because the children from the youngest age group participated only in the select picture condition.) The main effect of condition was not significant, $F(1, 90) = 3{\cdot}45$; nor were any interactions involving this factor. This finding was surprising in light of evidence that acting out of responses results in more accurate interpretations of ambiguous verbal messages, such as metaphors or unclear instructions (e.g. Markman, 1977; Vosniadou, Ortney, Reynolds & Wilson, 1984) than do verbal responses. Data for children across the two conditions were collapsed for all subsequent analyses investigating word interpretation. For analyses of word interpretation scores, as described below, scores for accurately used words were omitted due to an expected ceiling effect (subjects responded correctly on all but 11 of the 672 responses to accurately used words).

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Group performance

The first question to be addressed concerned whether homonymity (i.e. a word that was phonologically and semantically familiar) would affect a child's use of context to derive a new word's meaning, and, if so, whether the effect of homonymity would interact with age. To address these questions, analyses were done to see if the number of correct responses (i.e. those that were consistent with the story context) was related to age and/or word type. Thus a 4 (age: 2-year-olds, preschoolers, second graders, and fifth graders) × 2 (word type: pseudo-homonym vs. nonsense word) ANOVA, with repeated measures on the second factor, was carried out. Two main effects were found: age, $F(3, 108) = 55{\cdot}60$, $p < 0{\cdot}0001$, and word type, $F(1, 108) = 255{\cdot}71$, $p < 0{\cdot}0001$; these findings are consistent with the effects of age and word type seen among preschoolers, second graders and adults in Experiment 1. There was also a significant age × word type interaction, $F(3, 108) = 9{\cdot}11$, $p < 0{\cdot}0001$ (see Table 4). As in Experiment 1, nearly all of the INcorrect

TABLE 4. *Mean number (and standard deviation)*[a] *of correct responses as a function of age*,[b] *response mode condition, and type of key word in Experiment 2*

	Type of key word		
Age group[b]	Accurately used	Nonsense	Pseudo-homonym
Toddlers	5·61 (0·59)	3·57 (1·45)	1·50 (0·97)
Preschoolers			
Act out		4·31 (1·55)	0·81 (1·11)
Select picture		4·00 (1·79)	0·69 (0·87)
Total	5·81 (0·40)	4·16 (1·61)	0·75 (0·98)
Second graders			
Act out		5·67 (0·60)	2·38 (1·54)
Select picture		5·81 (0·40)	1·88 (1·82)
Total	6·00 (0·00)	5·75 (0·51)	2·13 (1·68)
Fifth graders			
Act out		6·00 (0·00)	4·81 (1·42)
Select picture		5·88 (0·34)	3·69 (1·70)
Total	5·97 (0·18)	5·94 (0·24)	4·25 (1·65)

[a] In each cell, the maximum possible number is 6.
[b] $N = 32$ for each age group, except toddler group where $N = 16$. For each response mode subgroup, $N = 16$.

interpretations of pseudo-homonyms were literal: of the 420 incorrect interpretations made by the 112 children in this experiment, only 11 interpretations were NOT literal. (Of these 11 responses, 4 were made by toddlers, 4 were made by preschoolers, 1 was made by a second grader, and

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2 were made by fifth graders.) Thus the vast majority of incorrect interpretations of pseudo-homonyms, across both studies, were literal.

Tests of simple effects showed that within each age group, the effect of word type was significant at the $p < 0{\cdot}0001$ level, Fs(1, 108) = 24·55, 126·16, 142·88, and 30·96, for the toddlers, preschoolers, second graders and fifth graders, respectively. The effect of age was present for both word types, $F(3, 108) = 35{\cdot}00$, $p < 0{\cdot}0001$; $F(3, 108) = 28{\cdot}48$, $p < 0{\cdot}0001$, for the pseudo-homonym and nonsense words, respectively (see Table 4). *Post hoc* comparisons (Newman–Keuls) revealed that the number of correct interpretations of the six pseudo-homonyms made by the toddlers was NOT significantly different from the number of correct interpretations made by preschoolers, nor by second graders. However, second graders made significantly more correct interpretations than did preschoolers, and fifth graders made significantly more correct interpretations than did each of the three younger age groups, $p < 0{\cdot}01$. Thus the children who appear to have been the least aware of a pseudo-homonym's new, intended meaning were the preschoolers and toddlers, and fifth graders made significantly more correct interpretations of pseudo-homonyms than did the children in each of the other three age groups.

A different pattern of age differences was seen for the interpretations of nonsense words. In the latter case, the number of correct interpretations made by fifth graders was significantly greater than the number of correct interpretations made by toddlers and by preschoolers, $p < 0{\cdot}01$; but not significantly greater than the number of correct interpretations made by second graders. The second graders made significantly more correct interpretations than did the preschoolers and the toddlers, $p < 0{\cdot}01$, although the scores of the latter two groups did not differ significantly. These results show developmental differences in the effects of homonymity on a child's interpretation of a word, and that developmental differences vary between homonymous and unfamiliar words. Although second graders made fewer correct interpretations of pseudo-homonyms than did fifth graders, when interpreting nonsense words the number of correct interpretations made by children in these two age groups did not differ. Thus ceiling in performance appears to be achieved earlier for deriving meaning of novel-sounding words than for deriving meanings of homonyms.

Comparison to chance performance

Although children in each age group made fewer correct responses to pseudo-homonyms than to nonsense words, it is important to examine how many children in each age group correctly interpreted pseudo-homonyms overall. As in Experiment 1, the probability that any child will respond correctly to any one-word interpretation task by chance is 0·1667; and to

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achieve a score significantly above chance, a child has to make four or more correct responses out of six words (Binomial $p = 0{\cdot}0087$). The number of children who made four or more correct responses out of six was examined as a function of age and word type (see Table 5).

TABLE 5. *Number*[a] *of children making four or more correct interpretations, as a function of age group and type of key word in Experiment 2*

	Type of key word		
Age group	Accurately used	Nonsense	Pseudo-homonym
Toddlers	16	9	0
Preschoolers	32	23	0
Second graders	32	32	7
Fifth graders	32	32	26

[a] $N = 32$ except toddler group where $N = 16$.

Considering each of the four age groups, the probability that 2 or more of the 16 toddlers will make four or more responses is 0·008 (the probability that 1 of the 16 toddlers makes four or more correct responses does not exceed what would be expected by chance, $p = 0{\cdot}122$); and the probability that 2 or more of 32 children (as is the case for each of the remaining age groups) will make four or more correct responses is 0·028. (The probability that 1 of 32 children makes four or more correct responses is 0·212). None of the children in the toddler and preschool age groups responded correctly to four or more of the pseudo-homonym interpretation trials. This was considered as further evidence that the two response conditions did not influence accuracy of pseudo-homonym interpretation, because none of the 16 preschoolers in either condition performed better than chance. A minority (7) of the 32 second graders performed significantly better than chance. Of these 7, 3 were in the select picture condition, and 4 were in the act out condition. The majority of the fifth graders performed at a level better than chance; the probability of 26 or more of the 32 children responding correctly on four or more of the six trials by chance is $2{\cdot}31 \times 10^{-48}$. This group was the only one for which a tendency for more accurate responses was seen in the act out condition; 11 of the 16 children in the select picture condition and 15 of the 16 children in the act out condition performed better than chance. However, this difference in frequency was not significant, χ^2 (1) = 3·28, Fisher's Exact $p = 0{\cdot}095$.

The important points to be taken from these analyses are that: (1) toddlers, preschoolers, second graders and fifth graders are all successful at comprehending unfamiliar words spoken in context, but also that (2) within some

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age groups, if the word being interpreted is already associated with a familiar meaning, children are significantly less likely to use context to derive meaning. Furthermore, (3) responding in a more detailed manner (acting out a response vs. merely selecting a picture) does not affect how young children (preschool and second graders) respond to a first encounter with a novel meaning of a familiar word, nor does it affect how children interpret an unfamiliar word. We can conclude that children in each of the four age groups are able to use context, because they succeeded in interpreting nonsense words. However, children in the three youngest age groups no longer rely on context to interpret a word when the word and its meaning – but not its novel word-meaning association – are familiar, as is the case with homonyms.

No word condition and item analyses

The results of the first and second experiments showed that homonymity affects whether young children use context to interpret a word's meaning. Specifically, these results showed that children are less likely to make an interpretation that is consistent with the context if the word being interpreted is familiar (i.e. a homonym). This effect is especially marked for the preschoolers.

It is important to examine whether it is the presence of a homonymous or unfamiliar key word that affects a child's subsequent use of contextual information. The no word condition was included so that preschoolers' use of context corresponding to a key word could be compared to preschoolers' use of the identical context in the absence of any key word. The preschoolers in the no word condition heard the same stories which where heard by the remaining subjects in both experiments, with one exception: the key words were replaced with the word 'thing', or 'something' was used instead. For example, instead of reading the sentence from Story 1 (as it appears in the Appendix), in the preliminary study the experimenter read, 'Becky was helping her father build something in the yard. They used tall pieces of wood so that the thing would keep the dog in the yard.' The children were then asked to choose a picture of the 'thing' in the story.

A one-way ANOVA was conducted with the 12 intended meanings corresponding to nonsense word and pseudo-homonym key words (listed in Table 1) as subjects. The dependent variable, which was treated as a repeated measure, was the number of preschoolers out of 16 who made correct interpretations of the intended meaning per each of three key word conditions: no key word, pseudo-homonym key word, and nonsense key word. For each key word condition, 16 preschoolers had been asked to interpret the intended meaning. (Responses made by children in both the select picture and acting out conditions were included because no significant effect of condition was supported, as was described earlier.)

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The results show that key word condition did affect how many of the 16 preschoolers correctly interpreted meaning, $F(2, 10) = 192{\cdot}73$, $p < 0{\cdot}0001$ (see Table 6). Tests of contrasts showed that significantly fewer children

TABLE 6. *Item analyses : number of children*[a] *making correct interpretations of word meanings as a function of the type of word corresponding to the meaning*

	Type of key word		
Meaning	None	Nonsense	Pseudo-homonym
shovel	15	10	0
hammer	16	11	1
ball	16	8	1
flower	16	9	5
horn	16	14	4
car	16	11	1
scarf	16	14	1
kite	16	13	1
clown	15	11	0
ice-cream	16	8	2
cage	16	14	8
hat	16	9	0
Mean (across 12 meanings)	15·83	11·00	2·00

[a] For each type of key word, 16 children each made one response per word.

made correct interpretations of word meanings corresponding to nonsense words than they did of meanings in the no word condition, $F(1, 11) = 53{\cdot}47$, $p < 0{\cdot}0001$. This result suggests that, although the conflict with referent labels may not entirely obscure a child's use of context to derive word meaning, this conflict may have some effect on the interpretation process. However, the difference between the mean number of children correctly interpreting meanings for nonsense words and the mean number of children correctly interpreting meanings for pseudo-homonyms, was greater than the difference between the former and the number of children who derived the correct intended meanings in the no word condition. Thus although the conflict with referent labels does appear to have some effect on children's word interpretation, it alone does not account for children's reluctance to assign a new meaning to a familiar word.

Comparisons between fifth graders and adults

The interpretation scores from the 32 fifth graders in Experiment 2 were included in an analysis with the subjects from the first experiment. This was done to compare the performance of the fifth graders with that of the adults. A 2 (age) × 2 (word type) ANOVA was carried out, and the results show a

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main effect of word type: $F(3, 92) = 36{\cdot}66$, $p < 0{\cdot}0001$, respectively. Also found was a significant age by word type interaction, $F(3, 92) = 9{\cdot}45$, $p < 0{\cdot}0001$, with the total numbers of correct interpretations out of six words interpreted by fifth graders and adults being 3·69 (S.D. = 1·70) and 5·19 (S.D. = 1·52) for the pseudo-homonyms, respectively, and 5·88 (S.D. = 0·34) and 5·94 (S.D. = 0·25) for the nonsense words, respectively. Although the fifth graders made fewer correct interpretations of pseudo-homonyms than did the adults, it is worth noting that the pattern of errors exhibited among the two groups is similar in respect to which words were interpreted incorrectly. Among the 10 adults (out of 16) who incorrectly interpreted ONE of the six pseudo-homonyms, all 10 erred on the first of six pseudo-homonyms. Among the 11 fifth graders (out of 32) who incorrectly interpreted ONE of the six pseudo-homonyms, 9 erred on the first pseudo-homonym presented to them. It is true that only 2 of the 16 adults made more than one incorrect interpretation whereas 14 of the 32 fifth graders made more than one error. However, among those subjects who erred only once, the error tended to occur with the first pseudo-homonym presentation.

DISCUSSION

The primary aim of the present experiments was to examine whether homonymity affects children's use of semantic context to derive word meanings. The young children in this study were able to derive word meaning from semantic story contexts *per se*; the majority of 16 toddlers, 64 preschoolers, and 64 second graders (across the two experiments) successfully interpreted nonsense words, and nearly all (99%) of the responses made by the 16 preschoolers in the no word condition in Experiment 2 were also correct (i.e. contextually based). Although the simple story contexts in this study provided sufficient information from which children as young as two years of age derived a word's meaning, the children's use of this information was less frequently evident in their interpretation of pseudo-homonyms. In view of the identical story contexts across word types, the children's inaccurate interpretations of these words appear to result from their homonymous nature. Thus the present experiments show that the acquisition of homonymous words differs from the interpretation of unfamiliar new words (nonsense words).

The role of homonymity

The results from Experiments 1 and 2 support the notion that homonymity constrains children's interpretation of word meaning. When a new word sounds familiar, preschoolers are likely to base their interpretation on an established lexical entry that corresponds to the phonological make-up of the

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word. Many second graders based their interpretation of familiar words on context, although there was a significant number of second graders who interpreted familiar words literally, as did an overwhelming majority of the preschoolers. Fifth graders and adults were more likely to rely on context, rather than on a familiar meaning, when interpreting a homonymous word. However, homonymity did decrease the likelihood of arriving at a contextually based interpretation even for fifth graders.

The degree to which homonymity constrains the interpretation of homonymous words varied across different age groups, as exemplified by the fact that the number of literal interpretations of pseudo-homonyms changed with age: (1) preschoolers made significantly more literal interpretations of pseudo-homonyms than did the second graders, fifth graders, and adults; (2) second graders made significantly fewer literal interpretations than did preschoolers but a significantly greater number of literal interpretations than did fifth graders; and (3) fifth graders made fewer literal interpretations than did any of the three younger age groups. The lack of a significant difference between the toddler and preschool children's interpretation of pseudo-homonyms may have been due to the small sample size of the toddler group. However, despite the tendency for the toddlers to achieve more correct answers than the preschoolers, as seen in Table 4, analyses of the individualized performance indicates that none of the 16 toddlers and only one of the 64 preschoolers tested across studies performed at a level that exceeded chance.

The lack of an effect of response condition may indicate the strength with which homonymity affects word interpretation. It was hypothesized that fewer children would make literal interpretations of pseudo-homonyms when enacting the stories with paper dolls versus when selecting an illustration of the key word in question, but no such significant difference emerged. The difference in the number of children within each age group to perform better than chance did not differ significantly across response conditions. The lack of an effect may represent insufficient statistical power, particularly for the fifth graders. However, there was clearly no effect of response condition among the preschoolers: all 16 in the select picture condition and all 16 in the act out condition performed more poorly than chance on pseudo-homonym interpretation. Only one of the 32 preschoolers in the first experiment performed better than chance. The number of second graders in the second experiment who performed better than chance was equivalent across the select picture and act out conditions (3 and 4, respectively). It may be that the effect of enacting new information does influence interpretation, but that the effect of homonymity overrides this influence, especially among preschoolers.

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Why are homonyms difficult for the young language learner to acquire?

Backsheider & Gelman (1995) have recently shown that preschoolers have both the metalinguistic awareness and cognitive flexibility necessary for accurate homonym interpretation. In their study, real homonym pairs were used (e.g. bat and bat) and prior familiarity with both meanings was both assumed and tested. Homonymity was modelled (e.g. 'this is a X and this is a X; they…have the same name but mean a different kind of thing') in a warm up trial. Preschoolers succeeded when asked to 'find another kind of X', and knew that each homonym referred to referents from different categories. However, the preschoolers sometimes also reported that non-homonymous referent pairs had the same name, and that non-homonymous referents from the same superordinate categories (chair, throne) were different kinds of things. The important implications from their study is that preschoolers demonstrate sufficient metalinguistic and cognitive flexibility to use familiar homonyms under these conditions, and that a one-to-one mapping rule does not appear to govern their naming or interpretation responses. In view of the evidence for these abilities, it is quite interesting that preschoolers fail to interpret accurately new homonymous words under less structured conditions, and even under the more structured condition as that provided by Beveridge & Marsh (1991), described below.

Beveridge & Marsh illustrated how linguistic context can significantly enhance accuracy of homonym interpretation among preschoolers. In their study, young children were first asked simply to choose an illustration depicting a word presented orally. The majority of three-, four-, five- and six-year-old children in their study selected an illustration that clearly demonstrated their knowledge of a primary meaning of a homonym (such as buoy). When asked to choose an illustration upon hearing the homonym embedded in a story, a significant number of children in each age group selected another (correct) illustration. The effect of linguistic context was even more apparent for the condition in which an expanded, more elaborate story was used. However, 70% of the four-year-olds persisted with the primary meaning when presented with the simpler story, and 38% of the six-year-old children persisted with primary meanings when presented with the elaborate stories.

That children fail to rely independently on skills which they are capable of executing is one of the interesting conclusions to be drawn from these aforementioned studies. Given the proper scaffolding, children do seem able to reconcile any apparent conflicts posed by homonymous word pairs, as illustrated by the manner in which parents present homonyms to their young children (Kohn & Landau, 1990). When asked to respond as if their child had queried, 'what is a __?', the parents in their study used distinct markers for one word from each homonym-pair presented. For instance, a suitcase-like

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trunk was labelled, 'trunk', whereas the trunk of a tree was labelled, 'tree trunk'. Their behaviour implicates their awareness that young children attempt to individuate homonyms, as Slobin (1985) has described. Alternatively, the authors suggest, the parents themselves may have preferred to retain a one-to-one word meaning mapping, or may have acted to enhance the efficiency with which their child formed a lexical entry. Thus the processes that naturally occur when either defining or interpreting a word seem influenced by whether the word in question is a homonym.

Despite the clear effect of homonymity on word interpretation, the processes underlying word interpretation are less clear. Three possible responses to homonym interpretation were presented earlier, and include: (1) acceptance of the primary meaning of the word without experiencing conflict; (2) acceptance of the primary meaning of the word despite being unable to resolve a conflict between the primary and intended meanings, thereby generating alternate hypotheses for a new, secondary meaning. In the present study, the responses by the fifth graders and adults were consistent with the third of these possibilities; whereas the responses by the preschoolers and by some of the second graders were consistent with the first and second possible explanations. The children in this study were less likely to infer word meaning correctly when the referent was associated with a new label, as compared to when the referent was not associated with any label, for reasons that remain to be explored. However, despite this effect, the majority of children in all four age groups did accept a nonsense word as a new label for a familiar referent. Thus it is clear that children can derive meaning from contextual information; yet children sometimes fail to do so when the word being interpreted is homonymous, despite glaring inconsistencies between the word's familiar and novel meanings.

The findings from the present experiments concerning both pseudo-homonym and nonsense word interpretations contribute toward our understanding of lexical acquisition. However, there are limitations to how these findings can be generalized. The results concern new NOMINALS presented orally in story contexts which refer to FAMILIAR referents. Whether the effects might differ as a function of word class (e.g. common nouns, proper nouns, verbs) and/or of familiarity of the referent cannot be deduced from the present findings. Perhaps homonyms of different word classes are more accurately interpreted than are homonyms of the same word class. For example, children may more easily understand that *meet* differs in meaning from *meat*, because the linguistic context surrounding these two words would suggest that the intended meanings refer to a verb and a noun, respectively. Similarly, the question remains whether homonymity effects would persist if the referent familiarity varied. To test this hypothesis, a procedure identical to the one employed in these studies could be carried out in which all intended meanings for the nonsense words and pseudo-homonyms referred

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to unfamiliar objects. In addition to the illustration of the unfamiliar objects to which the key words refer, it would be important to include foils which also depicted unfamiliar objects.

The findings obtained for the pseudo-homonyms in these experiments, and their implications for children's acquisition of new word meanings, deserve close attention because they inform us about word learning situations that are common throughout lexical development. The implications extend beyond the seemingly unnatural nature of the pseudo-homonyms themselves: the pseudo-homonym, although intended to mimic a child's first encounter with a real homonym whose less familiar meaning is not yet in the child's vocabulary, may also represent ANY word which bears close phonological approximation to an entry in a child's lexicon (e.g. magician, musician). This generalization was implicated by the item analyses finding in which 'cage' was associated with a 'cake' more frequently than any of the remaining 15 key words were associated with their homonymous referent. However, the words presented in this study sounded identical, not similar, to a familiar word. Whether the findings will generalize to similar sounding word pairs remains to be explored. The central issue appears to be that, if a word SOUNDS IDENTICAL to a young child, the child will tend to rely upon his or her already acquired meaning for the familiar word. The present experiments demonstrate that this type of response may occur even in the presence of sharply conflicting information provided within semantic context, especially for preschoolers and toddlers, but also for second graders. This may result in a longer period of time for the homonymous word's secondary meaning to be acquired, relative to the acquisition of the primary meaning. As shown in these experiments, homonymity is a powerful inhibitor of children's tendency to derive a meaning for a new word from context.

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APPENDIX

Story 1 as it appeared across the four sets of stories used in Experiments 1 and 2 (key words are in italics).

SET A

Becky was helping her father build a *fence* all around their backyard. They used tall pieces of wood so that the fence would keep the dog in the yard.

First Becky used a *rope* to pound the nails into the fence. Becky held the heavy handle of the rope and pounded.

Then Becky used a *blus* to dig a hole in the ground. She pushed the sharp metal blus into the dirt.

SET B

Becky was helping her father build a *fence* all around their backyard. They used tall pieces of wood so that the fence would keep the dog in the yard.

First Becky used a *blus* to pound the nails into the fence. Becky held the heavy handle of the blus and pounded.

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Then Becky used a *rope* to dig a hole in the ground. She pushed the sharp metal rope into the dirt.

SET C

Becky was helping her father build a *fence* all around their backyard. They used tall pieces of wood so that the fence would keep the dog in the yard.

First Becky used a *blus* to dig a hole in the ground. She pushed the sharp metal blus into the dirt.

Then Becky used a *rope* to pound the nails into the fence. Becky held the heavy handle of the rope and pounded.

SET D

Becky was helping her father build a *fence* all around their backyard. They used tall pieces of wood so that the fence would keep the dog in the yard.

First Becky used a *rope* to dig a hole in the ground. She pushed the sharp metal rope into the dirt.

Then Becky used a *blus* to pound the nails into the fence. Becky held the heavy handle of the blus and pounded.

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