CHILDREN'S USE OF PRAGMATIC COMPETENCE AS EVIDENCE FOR THE

RELIABILITY OF AN INFORMATION SOURCE

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TABLE OF CONTENTS

Page

Chapter

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Effective communication requires pragmatic competence. Such competence involves the correct use of conversational norms and extends beyond the literal meanings of words and sentences. Grice (1975) argued that for a conversational act to be successful, interlocutors should assume that the other is being cooperative. For example, when asking for the time, one assumes that the response to their question will be relevant and truthful, such that they will be told the correct time rather than the date (irrelevant) or the wrong time (untruthful). Previous research with preschool children has found that they can recognize Gricean maxims (Ackerman, 1981; Eskritt, Whalen & Lee, 2008) in some circumstances. However, the present study investigated whether children recognize adherence to the Gricean maxims of quality (truthfulness) and relation (relevance) in an observed everyday conversational context in which no feedback is provided. Prior studies demonstrating 4- and 5-year-olds' ability recognized adherence to these two maxims provided participants with feedback about the usefulness of a speaker's utterances (Eskritt, et at., 2008). Additionally, the present study investigated some of the inferences that children make about speakers based on evidence from pragmatics.

Gricean Maxims

The use of language has been studied extensively. One area that has been of particular interest involves the appreciation of unstated rules of conversation (Ackerman, 1981; Eskritt, Whalen & Lee, 2008; Siegal, 1999). According to Grice (1975) communication is guided by a set of assumptions (or maxims) that conversational

partners make about one another. In essence, each conversational partner assumes that the other will follow a set of rules that make the communicative act a cooperative one (Grice, 1975). For example, there is an expectation of truthfulness in conversation. When a person asks for directions to the ice cream shop, both he and the person being asked must assume that the other is being truthful. One expects to hear the directions to the ice cream shop and not the library while the other assumes that the requester truly does not know how to get there. To be useful, these assumptions should be understood by all parties involved in a conversation so that a speaker's intended meaning is correctly interpreted by a listener.

In Grice's original conceptualization there were four maxims: quality (be truthful), relation (be relevant), quantity (provide as much but not more information than required) and manner (be unambiguous, brief and orderly). Previous research by Ackerman (1981) demonstrated that 6- and 7-year-olds, but not 5-year-olds, can discriminate between utterances based on whether the speaker adhered to conversational maxims. The detection of Grician maxim violations, therefore, appears to be a difficult task for younger children. Participants were read stories that contained utterances which they had to attribute to one of two speakers. Rule-violating utterances were generally attributed to a character described as nonconventional, while appropriate utterances were attributed to a character described as conventional.

In a more recent study, Eskritt, et al. (2008) found that 3- to 5-year-old children ask for information from an individual (puppet) who has previously adhered to the Gricean maxims of quality and relation. However, children made this distinction after receiving feedback about the helpfulness of the speakers' answers. To test children's awareness of maxim adherence, they created a situation in which children had to request information from one of two puppets: a Gricean follower or a Gricean flouter. Their task consisted of four familiarization trials followed by a series of test trials. During

each familiarization trial the experimenter hid a sticker under one of three cups while the child looked away. Then, as the child looked on, the experimenter asked one of the puppets for help finding the sticker (each puppet was asked by the experimenter to provide information in two of the four familiarization trials). Children selected a cup to look under based on the information provided by the puppet. The Gricean flouter did not provide any useful information, whereas the Gricean follower provided accurate information about the location of the sticker. Participants who abided by the Gricean follower's advice would find a sticker they could keep. Participants who followed the Gricean flouter's advice would realize that the information provided was not useful when it failed to help them find the sticker. Children who did not find a sticker were told that they would get an opportunity to find it in the next trial. Test trials were identical to familiarization trials except that participants, and not the experimenter, asked one of the puppets for help finding the sticker. To succeed in finding the sticker during test trials, children had to differentiate between the two puppets in order to request information from the Gricean follower. During test trials, asking the Gricean follower for information was taken as evidence that children had detected adherence to the maxim. They found that 4- and 5-year-old children were more likely to seek for clarification about a sticker's location from a puppet that adhered to the maxims of quality, relation or quantity than from a puppet that violated the same maxim. Three-year-olds only did so when making a choice between a maxim adherer and non-adherer of relation and quality. This research suggests that, when provided with repeated evidence and feedback about a speaker's utterances, preschoolers can differentiate between individuals who follow or violate some conversational norms. It is not clear whether children would be able to differentiate between individuals without receiving feedback about the quality of their answers.

Once a child makes a judgment about a particular person's pragmatic competence they may use that information to make further inferences about the

individual's capabilities. It has been shown that children use a person's past performance (e.g. incorrect object labeling, hesitation and admission of ignorance) to guide their inferences about that person's reliability as an information source (Birch & Bloom, 2002; Koenig, et al., 2004; Koenig & Harris, 2005; Sabbagh & Baldwin, 2001).

Trust in sources of information

A large amount of research has established that children use a speaker's past performance to make judgments about their reliability as an information source (Birch & Bloom, 2002; Koenig, et al., 2004; Koenig & Harris, 2005; Sabbagh & Baldwin, 2001). Most recently, research in this area has focused on children's use of mislabeling as a cue to unreliability (Birch & Bloom, 2002; Koenig, et al., 2004; Koenig & Harris, 2005). When given the option between previously reliable and unreliable speakers, preschoolers display a tendency to trust the information provided by the previously reliable speaker. The general procedure consists of a familiarization phase followed by a test phase. During the familiarization phase participants become acquainted with two speakers (a mislabeler and a correct labeler) as they attempt to label common objects (e.g. ball, shoe). The test phase consists mainly of a set of trials in which participants are asked to select the name of a novel object by choosing between labels provided by the two speakers from the familiarization phase. Children's endorsement of the previously accurate speaker's label is seen as selective trust in the information that they provide. The two speakers are presented alongside a third actor who inquires about the names of common objects during familiarization and of novel objects during test trials. This interaction follows a question and answer format in which the inquiring actor consistently asks the same question in reference to all the objects presented (Koenig, et al., 2004; Koenig & Harris, 2005). This research shows that preschoolers are sensitive to a speaker's reliability when provided with evidence about their past performance and that

this evidence is used to make judgments about future information that the speaker provides. However, there may be additional cues (e.g. pragmatic competence) that children take as evidence for the reliability of a speaker as an information source.

Current study

Several questions remain about children's competence. Are children aware of adherence to Gricean maxims in everyday conversational contexts? Children who observe others in conversation do not generally receive feedback about the quality of a person's remarks. Can preschoolers identify violations of Gricean maxims when observing others in conversation without directly interacting with them? What inferences do children make about speakers based on their past pragmatic performance? The present research will address these questions by investigating 4- and 6-year-olds' ability to recognize maxim violations in a naturalistic conversation between two adults. Furthermore, the investigation considers an additional set of cues that children may use to assess the reliability of an information source (i.e. pragmatic competence) by testing children's willingness to learn words from Gricean maxim adherers versus non-adherers. To this end, the method used in the current study was adapted from previous studies by Koenig and Harris (2005), and Pasquini, Corriveau, Koenig and Harris (2007).

The focus of this work will be on the maxims of quality and relation. These maxims were selected because children three years of age and older have been shown to be most successful at identifying speakers who violate them (Eskritt, et al., 2008). A group of 6-year-olds was included in the study because of the complexity of Gricean maxim interpretation. Prior findings have indicated that maxim interpretation is more difficult than mere recognition of violations. Children younger than 8 years of age who can recognize maxim violations have some difficulty interpreting the intended meaning of such utterances (Ackerman, 1981).

5

CHAPTER II

METHOD

Participants

Thirty-two 6-year-olds (M = 6 years 6 months, range: 6;0 to 7;0, 13 males) and

fifty-eight 4-year-olds (M = 4;8, range: 4;3 to 5;5, 27 males) participated in this study. All

children came from English-speaking families and were typically developing. Five

additional children participated but their data were excluded due to non-compliance (two

4-year-olds) and experimenter error (two 4-year-olds and one 6-year-old).

Materials

Two 13-inch television sets were placed on a table in front of a couch. Each was

connected to a DVD player that was controlled remotely by the experimenter.

Participants sat in the middle of the couch, equidistantly from the television sets. When

no video was playing, each television displayed an image of the actor whose video

would be shown. The experimenter always sat to the right of the participants. A digital

camera was used to record the sessions.

A box containing novel objects (see Figure 1) for the labeling trials was placed

out of view from the child, next to the experimenter. The novel objects were purchased

at a crafts store or made by removing parts from a larger object until an unrecognizable

part was left and they would be unnamable by children. Novel objects were paired based

on similar features (e.g. size, material), each pair being associated with one of four novel

labels (i.e. dake, teg, glap, and trome).

Label	Novel object pair

Figure 1. Test object pairs

Thirty second video clips were created to introduce participants to two female speakers (a good conversational partner and a bad conversational partner). Each female speaker interacted with the same person (a male actor) in a naturalistic conversation. One of the female actors played with balls and the other played with balloons. The good conversational partner reliably followed a conversational maxim, while the bad conversational partner violated the same maxim. In the quality condition the bad conversational partner violated the Gricean maxims of quality by stating something untrue when answering a question. In the relation condition the bad conversational partner stated something that was unrelated to what had been asked, violating the Gricean maxim of relation (for scripts see Figure 2). In order to maintain consistency across conditions the good social partners followed the same script in both conditions. However, the bad conversational partner scripts differed by condition to produce the appropriate maxim violation.

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┌─────────────────────────────────────────────────────────────────────┐
│                     Good conversational partner                      │
│        Male actor (M): How many balls/balloons do you have there?     │
│        Female actor (F): I have two balls/balloons here!              │
│        M: Where's the green ball/blue balloon?                        │
│        F: In the bucket/box.                                          │
│             (the true location)                                       │
│                                                                       │
│                                                                       │
│                     Bad conversational partner                        │
│                                                                       │
│   Quality condition                    Relation condition             │
│                                                                       │
│   M: How many balls/balloons do you    M: How many balls/balloons do you │
│        have there?                          have there?               │
│   F: I have sixty balls/balloons here!  F: I like to eat turkey!      │
│   M: Where's the green ball/red balloon? M: Where's the green ball/red balloon? │
│   F: On the floor.                      F: See my nose.               │
└─────────────────────────────────────────────────────────────────────┘
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Figure 2. Video scripts

Design and procedure

Children were tested individually in either the quality (N = 29 4-year-olds and 16 6-year-olds) or relation (N = 29 4-year-olds and 16 6-year-olds) condition. Within each age group, age was matched across condition and relatively equal numbers of males and females participated.

Experimental tasks were divided into two parts: a familiarization phase and a test phase. In the familiarization phase participants were introduced to the conversational partners and children's appreciation of conversational maxims was tested through conversational partner assessment and comparison questions. The word learning phase assessed children's willingness to learn new labels from each social partner.

Familiarization phase

During the familiarization phase all participants viewed the good and bad conversational partners as they interacted with the same individual in separate videos shown on different television sets. Additionally, children answered two kinds of questions about the conversational partners. In the conversational partner assessment questions children made judgments about each conversational partner separately. In the conversational partner comparison question children compared the two conversational partners. Each question will be described below. The experimenter introduced the female actors as her friends by saying, "Today we're going to watch some of my friends on TV. One of them is wearing a red shirt and the other one is wearing a pink shirt. Can you point to the girl with the red shirt? Can you point to the girl with the pink shirt?"

Each child watched the video presentation of the first conversational partner followed by two comprehension questions intended to highlight the most important aspects of the video. For example, in the balloon video the experimenter asked, "When he asked her how many balloons she had, what did she say?" and "When he asked her where the red balloon was, what did she say?" The video was then viewed a second time and the child was asked the conversational partner assessment question. This procedure was repeated with the video of the second conversational partner. After both conversational partners had been introduced children were asked the conversational partner comparison question.

Conversational partner assessment questions. For each conversational partner participants were asked, "Was she good at answering questions or not very good at answering questions?"

Conversational partner comparison question. After both conversational partners had been introduced the experimenter asked participants, "Who was better at answering questions?"

After the familiarization phase the word learning phase began when the experimenter held up the box containing the novel objects and told participants, "They [the female actors] were both here yesterday and I asked them some questions about the toys in this box. I asked them to tell me the names of the toys."

Word learning phase

The word learning phase of the study consisted of four trials. In each trial, participants had to determine which of two novel objects was the referent of a novel label. The conversational partners provided contrasting information about the correct object-label pairing and participants had to decide which was correct. One of four novel labels (i.e. dake, teg, glap, and trome) was presented in each trial and participants determined which of two novel objects it referred to. The labels were presented in one of four preset orders.

All word learning trials followed the same format: the experimenter introduced the first object by placing it in front of a picture (displayed on one of the television sets) of one of the conversational partners while saying, "The girl in the red shirt said this was a dake." She then placed the second object in front of a picture of the other conversational partner while saying, "The girl in the pink shirt said this was a dake." Looking away from the two objects and at the participant, the experimenter said, "They can't both be dakes! Only one is a dake. Which one is the dake?" If a child failed to select an object after being asked once, the experimenter reminded her that "the girl in the pink shirt said this was a dake and the girl with the red shirt said this was a dake. Which one is the dake?" Children selected one of the two referents in all trials. The target object in each trial was the one labeled by the good conversational partner.

The actor who played the good conversational partner, the television set in which the good conversational partner's video was shown, as well as the order in which the

videos were presented were roughly counterbalanced across participants as there was one extra 4-year-old in each condition. Similarly, the order in which the answer options were presented in the conversational partner assessment questions was roughly counterbalanced across participants. The conversational partner introduced first during the familiarization phase was mentioned first in word learning trials 1 and 4, while the second conversational partner to be introduced during familiarization was mentioned first in trials 2 and 3. All objects served as the target in the word learning trials for roughly half the children.

Coding

Conversational partner assessment and comparison questions. The conversational partner assessment and comparison questions were scored separately. Stating that the good conversational partner was good at answering questions and that the bad conversational partner was bad at answering questions were considered the correct responses to the two conversational partner assessment questions. For the conversational partner comparison question, stating that the good conversational partner was better at answering questions was considered the correct answer. For each question, a participant's answer was scored as 1 (for the correct answer) or 0 (for an incorrect answer).

Word learning trials. Children received a score of 1 during the word learning trials if the good conversational partner's referent was selected and a score of 0 if the bad conversational partner's referent was selected. Participants selected an object by pointing to it or referring to it by stating an indentifying characteristic (e.g. "the red one"). The total word learning test score for individual participants ranged from 0 to 4.

CHAPTER III

RESULTS

Two main questions were investigated. The conversational partner assessment and comparison questions tested children's ability to recognize adherence to conversational maxims. These results are reported first. Secondly, children's use of past pragmatic competence to make inferences about speaker reliability was assessed during the word learning phase. It was expected that children would endorse the referent-label pairs provided by the speaker who followed the conversational maxim. These results are reported last.

Conversational partner assessment and comparison questions

One of the goals of the present study was to investigate children's awareness of others' adherence to conversational maxims. The measure of this ability was children's answers to two conversational partner assessment questions and one conversational partner comparison question. If children recognize conversational maxim adherence then it was expected that participants would declare that the good conversational partner was good at answering questions (good conversational partner assessment), that the bad conversational partner was bad at answering questions (bad conversational partner assessment) and that the good conversational partner was better at answering questions (conversational partner comparison). Children were divided into two groups based on whether they recognized the maxim violation that was presented to them. Children were categorized as maxim recognizers if they answered all three questions correctly. Children were categorized as maxim non-recognizers if they failed to answer one or more of the three questions incorrectly.

Table 1: Correct responses to the speaker assessment and comparison questions

	Four-year-olds		Six-year-olds	
	Quality (N = 29)	Relation (N = 29)	Quality (N = 16)	Relation (N = 16)
Good conversational partner assessment	27 *	26 *	16 *	16 *
Bad conversational partner assessment	23 **	17	16 *	14 **
Conversational partner comparison	27 *	23 **	16 *	16 *

* p < .001
** p < .004
Binomial tests

Six-year-olds were more likely to be maxim recognizers than 4-year-olds when the two conditions were combined (χ^2(1, N = 83) = 8.959, p = .003) and in the relation condition (χ^2(1, N = 45) = 4.85, p = .03). This age difference almost reached significance in the quality condition (χ^2(1, N = 45) = 3.82, p = .051). Overall, participants were more likely recognize the maxim violation in the quality condition (χ^2(1, N = 90) = 5.03, p = .03). However, when the data were analyzed separately by age group, a significant differences between conditions appeared for 4-year-olds (χ^2(1, N = 58) = 3.84, p = .05), but not 6-year-olds (χ^2(1, N = 32) = 2.13, p = .14). All 6-year-olds in the quality condition were maxim recognizers while 14 out of 16 (p =.004) six-year olds recognized the violation in the relation condition. Four-year-olds were maxim recognizers in the quality (23 out of 29, p =.002), but not in the relation condition (16 out of 29, p =.71). See Table 1 for a summary of responding by question type.

Word learning test

The word learning phase tested children's relative trust of the conversational partners. Children were predicted to select the label-referent pair that was endorsed by the good conversational partner.

A two way ANOVA (age group X condition) with word learning test scores as the dependent variable revealed a main effect of age group ($F(1,86) = 5.49$, $p = .01$) indicating that 6-year-olds were more likely than 4-year-olds to select the referents that had been labeled by the good conversational partner. There was no main effect of condition ($F(1,86) = 0.56$, $p = .42$) or age group by condition interaction ($F(1,79) = 2.56$, $p = .09$).

Scores for the word learning phase were tested against a chance score of 2 (Figure 3). Six-year-olds selected the good conversational partner's referent at above chance levels in both the quality ($M = 2.75$ out of 4, $SD = .78$, $t(15) = 3.87$, $p = .002$) and the relation ($M = 2.94$, $SD = .93$, $t(15) = 4.038$, $p < .001$) conditions. Four-year-olds performed above chance in the quality condition ($M = 2.59$, $SD = 1.12$, $t(28) = 2.82$, $p = .009$) but not in the relation condition ($M = 2.07$, $SD = .80$, $t(28) = .47$, p=.65)[1]. Independent samples t-tests revealed that 6-year-olds' performance did not differ by condition ($t(30) = -.62$, $p = .54$), but 4-year-olds were more likely to select the good conversational partner's referent in the quality condition ($t(56) = -.2.03$, $p < .05$).

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[1] An analysis of the word learning scores from only the maxim recognizers revealed a similar pattern of results: a main effect of age (but no main effect of condition or age group by condition interaction), 6-year-olds performed above chance in both conditions and 4-year-olds did so only in the quality condition. However, the performance if this group of 4-year-olds did not differ by condition.
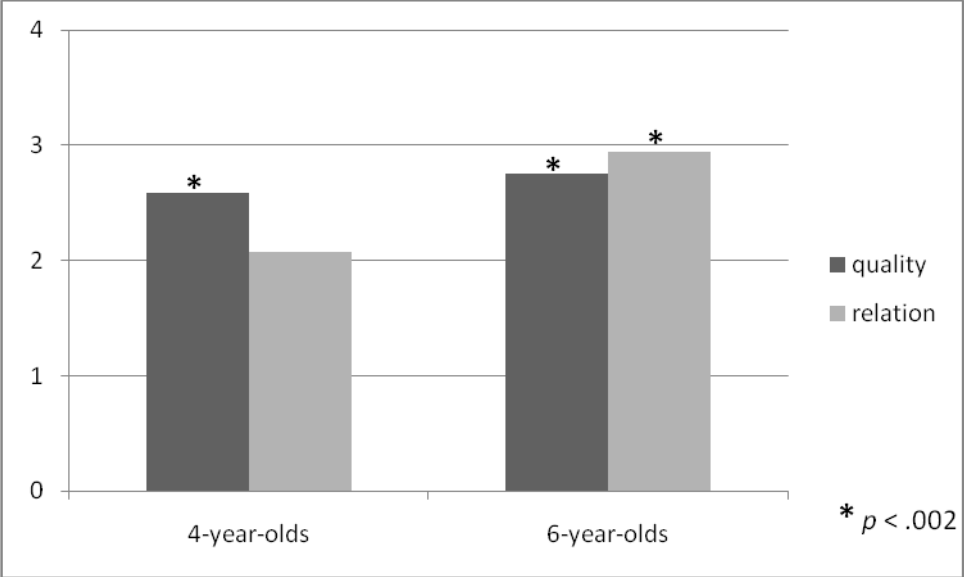
Figure 3. Mean target selection

CHAPTER IV

DISCUSSION

The present study investigated children's understanding of the Gricean maxims of quality and relation. Two questions were asked about children's understanding of these maxims: can children recognize maxim adherence in an everyday conversational context and what inferences do children make about speakers who violate a maxim? Six-year-olds demonstrated an ability to recognize maxim violations of both quality and relation. On the other hand, 4-year-olds recognized violations of the maxim of quality but not relation. Furthermore, except for four-year-olds in the relation condition, children displayed a tendency to endorse the label-referent pairs provided by the good conversational partner. This finding indicates that children can use information about Gricean maxim adherence to make inferences about the reliability of an information source.

This research extends previous findings about children's awareness of adherence to Gricean maxims in several ways. Previous studies have indicated that 6-year-olds can recognize adherence to the Gricean maxims of quality and relation even in the absence of rich scaffolding (Ackerman, 1981), and that 4-year-olds can recognize adherence in information-rich contexts (Eskritt, et al., 2008). The present study confirmed 6-year-olds' ability to recognize maxim adherence but extends this by demonstrating that they can extract information about pragmatic competence from an observed everyday conversation. In addition, 4-year-olds demonstrated this ability in the quality condition and did this in the absence of explicit feedback about the quality of the speakers' utterances. Importantly, children at both age groups gathered the evidence needed to assess the social partners' competence from short videotaped (yet

naturalistic) conversations, indicating that children can evaluate third party interactions to gather evidence about individuals they have never interacted with personally (see also Floor & Akhtar, 2006). It appears that children can make judgments about the social abilities others by observing conversations.

In the relation condition, the bad conversational partner responded to a question by stating something that was unrelated to what was asked. Four-year-olds were unable to indicate that the speaker was not very good at answering questions. This result seems to contrasts with their ability to correctly identify the conversational partner who was better at answering questions, which demonstrates that they must have some awareness that one person did not answer questions as well as the other. What makes the first assessment more difficult for 4-year-olds? First, 4-year-olds may have found it difficult to determine that the relation maxim violation was inappropriate. Second, dissimilarities between the two maxim violations may account for differences in children's ability to recognize them. These possibilities are discussed further below.

Even though 4-year-olds in the relation condition did not recognize that the bad conversational partner was "not very good at answering questions", the same group of children accurately declared that the good conversational partner was "better at answering questions." In other words, 4-year-olds did not judge the bad conversational partner's utterances as inappropriate until they were asked to compare the two conversational partners. It is important to note that appropriate use of language does not require strict adherence to Gricean maxims, in fact, certain violations are used to convey specific meanings. A sarcastic comment or a joke can only be understood if the listener disregards the explicit meaning of an utterance for the appropriate implicit meaning (Eskritt, et al., 2008; Siegal, 1999). For example, on a rainy day a friend might say "Wow, it sure is sunny today." If taken literally, this statement not only makes little sense, but it violates the maxim of quality. However, a competent communicator will, upon

detecting that a conversational maxim has been violated, reevaluate the utterance to arrive at its intended sarcastic meaning. It is possible that, when asked to assess only the statements made by the bad conversational partner, 4-year-olds detected that a Gricean maxim had been violated but did not have enough evidence to consider it an inappropriate use of language. The conversational partner comparison questions (i.e. "Who was better at answering questions?") implied that one partner had not been good at answering questions. This additional piece of information may have provided the evidence that children needed to decide that the violation of the maxim of relation was inappropriate. Young children may be aware that maxim violations are allowed in conversation but, without the tools to evaluate such violations, they may be unable to make correct assessments about the appropriateness of a response. This idea is consistent with prior findings suggesting that children younger than 6 years of age do not reliably come up with their own implicit interpretation of an utterance in light of a maxim violation (Ackerman, 1981).

A second explanation for 4-year-olds' failure to recognize violations in the relation condition but not the quality condition involves differences between the two maxims. The quality violation produced an utterance with a truth value that could be evaluated on its own (e.g. a speaker stating that she had 60 balloons while holding 2 balloons). On the other hand, to recognize a violation of the maxim of relation, participants were required to remember the question uttered by the male actor in order to compare it to the conversational partner's response. In light of this increased difficulty, children may need additional evidence for the faultiness of a response before being able to correctly assess it. A recent study by Fusaro and Harris (2008) demonstrated that in an ambiguous situation (i.e. two speakers labeling a novel referent with different novel labels) 3- and 4-year-olds endorsed the label provided by the person who received non-verbal approval from two bystanders. In the current study, the male actor responded in the same way to

maxim adherers and non-adherers. His apparent endorsement of both conversational partners' responses did not facilitate children's understanding of the maxim violations. It is possible that younger children may look for bystander cues when judging a speaker's utterances, especially in instances when the utterance is difficult to interpret.

A second question that was addressed in the current study was children's use of evidence of pragmatic competence to make inferences about the trustworthiness of a speaker. This was addressed by looking at children's willingness to learn new words from the two conversational partners. If children use evidence from the pragmatic competence displayed by each of the speakers, then they should trust the label-referent pairs provided by the maxim adherer. Six-year-olds in both conditions displayed selective trust in the maxim adherer. This was also true for 4-year-olds in the quality condition. Four-year-olds in the relation condition did not differentiate between the information provided by the two speakers. Gricean maxim adherers in the quality condition demonstrated their competence by providing truthful information during the familiarization phase. On the other hand, speaker competence in the relation condition was demonstrated through means unrelated to the truth value of the statement (i.e. relevant responses to questions). Since the word learning test required that children make judgments about the truthfulness of a speaker's statements, task similarity between the familiarization phase and the word learning test was greater in the quality condition than in the relation condition. Children in the relation condition had to assume that the tendency to provide relevant responses generalized to providing truthful statements.

In sum, six-year-olds recognized maxim adherence in the quality and relation conditions and used this evidence to selectively trust the label-referent pairs provided by the maxim adherer. Four-year-olds displayed this pattern in the quality but not the relation condition. Several possibilities that may account for this difference were

proposed. First, it may be more difficult to make judgments about violations that do not

possess a truth value. In these situations children may require additional evidence to

decide that an utterance is inappropriate. Such evidence may come from forced

comparisons of appropriate and inappropriate utterances as well as from the reactions of

bystanders. Finally, evidence about task competence may be difficult for young children

to generalize, so that the ability to make relevant contributions does not predict the

ability to make truthful statements. These possibilities will be investigated in future

studies.

An understanding of the ways in which children evaluate social others will

provide information about the features of social interactions that facilitate learning. The

present investigation found that children are not only aware of some conversational

conventions, but that they are, in some circumstances, more likely to trust information

provided by pragmatically competent individuals.

REFERENCES

Ackerman, B. P. (1981). When is a question not answered? The understanding of young children of utterances violating or conforming to the rules of conversational sequencing. *Journal of Experimental Child Psychology*, 31, 487-507.

Birch, S. A. J., & Bloom, P. (2002). Preschoolers are sensitive to the speakers' knowledge when learning proper names. *Child Development*, 73, 434-444.

Birch, S. A. J., Vauthier, S. A., & Bloom, P. (2008). Three- and four-year-olds use others' past performance to guide their learning. *Cognition*, 107, 1018-1034.

Eskritt, M., Whalen, J. & Lee, K. (2008). Preschoolers can recognize violations of the Gricean maxims. *British Journal of Developmental Psychology*, 26, 435-443.

Floor, P., & Akhtar, N. (2006). Can 18-month-old infants learn words by listening in on conversations?. *Infancy*, 9(3), 327-339.

Fusaro, M., & Harris, P. L. (2008). Children assess informant reliability using bystanders' non-verbal cues. *Developmental Science*, 11(5), 771-777.

Grice, H.P. (1975). Logic and conversation. In P.Cole & J.L.Morgan (Eds.), Speech acts, syntax and semantics (pp.113-128). New York: Academic Press.

Koenig, M. A., Clement, F., & Harris, P. L. (2004). Trust in testimony: Children's use of true and false statements. *Psychological Science*, 15, 694–698.

Koenig, M., & Echols, C. H. (2003). Infants' understanding of false labeling events: the referential roles of words and the speakers who use them. *Cognition*, 87, 179-208.

Koenig, M. A., & Harris, P. L. (2005). Preschoolers mistrust ignorant and inaccurate speakers. *Child Development*, 76(6), 1261-1277.

Lee, K., & Eskritt, M. (1999). Beyond the Gricean maxims: conversational awareness as a multifaceted domain of knowledge. *Developmental Science*, 2, 27-28.

Pasquini, E. S. , Corriveau, K. H., Koenig, M., & Harris, P. L. (2007). Preschoolers monitor the relative accuracy of informants. *Developmental Psychology*, 43(5), 1216-1226.

Sabbagh, M. A., & Baldwin, D. A. (2001). Learning words from knowledgeable versus ignorant speakers: Links between preschoolers' theory of mind and semantic development. *Child Development*, 72, 1054-1070.

Siegal, M. (1999). Language and thought: the fundamental significance of conversational awareness for cognitive development. *Developmental Science*, 2, 1-34.