Children's understanding of simple polite markers

Abstract

What do children understand about polite speech? Here we show that, with an improvement over the age of 2 to 4 years, English-speaking preschool children understand implications of simple polite markers: They understand that it is more polite and nicer (and less rude and mean) to use polite markers such as "please" and "can you ˜" when making requests, and that the use of these polite markers indicates that the speaker is more socially likeable and is more likely to gain compliance from their conversational partners. This work can help lay the foundation for future work on children's understanding of polite speech.

Keywords: Politeness, pragmatic development, online experiment

Introduction

We use and hear polite speech on a daily basis: polite utterances range from simple words of apology ("sorry") or gratitude ("thanks") to compliments ("I love your dress!") to ways of making requests ("Can you please open the window?"). Yet polite utterances are seemingly inefficient and even misinformative: speakers say "Can you please˜" when it should suffice to say, "Open the window." This creates a mystery for classical views of language as information transfer (Buhler, 1934; Goodman & Stuhlmuller, 2013; Jakobson, 1960; Shannon, 1948): If language is a tool for transferring information, speakers should be as efficient as possible in their communication to prioritize informativity. Nonetheless, speakers use politeness strategies even while arguing (Holtgraves, 1997) and risking high-stakes misunderstandings (Bonnefon, Feeney, & De Neys, 2011).

So why do people speak politely? Linguistic theories assume that people's utterance choices are motivated by social concerns, framed as either maxims (Leech, 1983), social norms (Ide, 1989), or listener's and/or speaker's public identity (face; Brown & Levinson, 1987). For example, face-based theories predict that a speaker's intended meaning contains a threat to the listener's face or self-image, the speaker's utterance will be less direct and informative. Thus, because saying "open the window" might give an impression that the speaker is assuming to be in a position to give orders to the listener, she would say instead, "Can you please open the window?" since conveying the message in a more indirect form of request gives the other person a sense of autonomy or freedom from imposition (Clark & Schunk, 1980). Thus, while it may hinder the goals of efficient information transfer, using polite speech can help the listener save his face and feel good about himself, while inferring that the speaker had kind motives as well (Yoon, Tessler, Goodman, & Frank, 2017).

Do children speak politely, and if so what do they understand about polite speech? Children begin producing polite speech early on; They start producing the simple polite marker "please" at 2.5 years (Read & Cherry, 1978), And request forms increase in their variety and frequency with age (Bates, 1976; Bates & Silvern, 1977; Bock & Hornsby, 1981; Ervin-Tripp, 1982; Nippold, Leonard, & Anastopoulos, 1982). Young children learn to produce different forms of requests depending on context: For example, by three years children are able to vary their utterances based on whether they are instructed to "tell" versus "ask" an addressee to given them a puzzle piece (Bock & Hornsby, 1981); By two years, children are able to modify their requests to make them more polite ("ask in the nicest way possible"; Bates & Silvern, 1977). Hence children's *production* of polite speech seems to parallel adult speakers' desires to produce utterances with appropriate levels of face-saving.

But do children *understand* a speaker's intentions behind polite speech? For example, upon hearing someone making a request ("Please pour me more water"), how might children evaluate this speaker? The question of how children reason about politeness has numerous sub-questions to be considered. First, do children know the word "polite" should be associated with politeness rules people abide by (e.g., saying "please")? Second, do children recognize polite speech as being positively valenced, such that they think it is better and nicer to say polite things? Third, do children understand social implications of speaking politely, such that people who are polite may be more likely to get their wishes granted ("I will pour him more water because he was nice") and may be better social partners compared to those who are impolite. Fourth, what cues to politeness do children recognize? Do they recognize linguistic markers such as "please," or "can you," or both? Or do they rely on prosodic cues that make utterances sound more respectful, or on facial expressions that make a person look kind?

Evidence for children's comprehension of polite speech is much sparser compared to production, and have been inconclusive regarding these questions mentioned. Though there was some initial evidence to suggest that producing a request with "please" is judged to be polite by thee years of age (Bates, 1976; Bates & Silvern, 1977), in a later study, the judgment of "please" as being polite was only replicated starting at five years of age, but not younger (Nippold et al., 1982). These initial studies also have additional unresolved issues, including the lack of statistical tests to assess each age group's performance, and lack of systematic manipulation of cues other than linguistic markers (e.g., prosody or facial expressions).

In this current work, we sought to test what 2- to 4-year-old children understand about polite speech. Across three Experiments, we presented stories about speakers who de-

cided to speak politely (e.g., "Please pour me more water") or impolitely (e.g., "Pour me more water") and asked child participants to compare between the two speakers. We were interested to know if children were sensitive to a speaker's use of simple polite markers (e.g., "please") and examined whether: (1) children are able to reason about speakers using polite speech as being "polite" and "nice" and not "rude" or "mean"; (2) they can reason about social implications of using polite speech (e.g., politeness as a sign of a nice play partner) (3) they show improvement with age for these lines of reasoning (4) they have to rely on other additional cues such as facial expressions (Expt 1) or prosodic cues (Expt 2), or they can make use of linguistic markers alone (Expt 3) to make appropriate inferences about the speaker.

Experiment 1

In Experiment 1, we tested whether 3- to 4-year-old children were able to understand implications of using simple polite markers, based on not only linguistic cues of interest (whether the speaker says "please," "can you"), but also extra cues that they might need (facial expressions and prosodic cues). Thus, we asked children to compare between speakers who used polite markers with a kind voice and facial expression versus speakers who did not use polite markers and spoke with a mean, angry voice and facial expression.

Methods

Participants 3-year-old ($n = 20$; 12 F, M_{age} = 3.61 years, SD_{age} = 0.22) and 4-year-old children ($n = 18$; 6 F, M_{age} = 4.38 years, SD_{age} = 0.25) were recruited from a local preschool. An additional 3 children were tested but excluded due to failure on the practice questions ($n = 2$) or completion of fewer than half of the test trials ($n = 1$).

Stimuli and design We designed a picture book with twelve stories in which a protagonist is approached by two speakers, one of whom makes a request by producing an utterance with a polite marker (e.g., "Please pour me more water"), and the other produces an utterance without ("Pour me more water"). There were three types of polite marker that could be used: "please" (as in "Please pour me more water"), "can you" ("Can you pour me more water"), and "can you please" ("Can you please pour me more water").

We designed six question types to ask participants following the presentation of the stories: four *speaker attribute* questions (*polite*: "Which one was more polite?"; *rude*: "Which one was more rude?"; *nice*: "Which one was nicer?"; *mean*: "Which one was meaner?") and two *social implication* questions (*play partner*: "Which one would you rather play with?"; *compliance*: "Which one will [get what they want]?"). Each participant would be asked one of the four speaker attribute questions, followed by one of the two social implication questions.

In Experiment 1, all utterances were produced live by the experimeter, with appropriate proodic cues and facial expressions for each request: thus, utterances with polite markers were produced by kind voice and facial expression, whereas utterances lacking polite marker were produced with angry voice and facial cues.

Procedure The experimenter presented to the child a storybook with a total of thirteen stories about different characters. In the *practice* phase, the child heard a story with one clearly mean character (*Drew kicked Carol*) and one clearly nice character (*Graham gave Carol a gift*). After a reminder of what each character did, the experimenter asked the participant: *Which one was being meaner?* and *Which one was being nicer?* If the child answered the question wrong the first time, the experimenter read the story one more time, saying, "Let's think about the story one more time." Only children who correctly answered both questions in the first or second attempt were included in the analyses.

In the *test* phase, the child heard twelve stories, in each of which they saw one speaker who decided to speak politely (*Jean wanted more water in her cup. Jean said to Fred, "Please pour me more water"*) and another speaker who spoke impolitely (*Suzy also wanted more water in her cup. Suzy said to Fred, "Pour me more water."*). After a reminder about what each speaker said, the child was asked a total of two questions. For the first question, the experimenter asked one out of four possible questions for speaker attribute: "Which one was being more polite [more rude/nicer/meaner]?" For the second, social implication question, the experimenter either asked about play partner (*Which one would you rather play with?*) or likelihood of compliance (e.g., *Which one will Fred give water to?*). The order of story types and question types was counterbalanced.

Results and Discussion

We looked at the proportion of correct responses to various questions to compare between a speaker who used a polite marker and spoke kindly, versus a speaker who did not use a polite marker and spoke meanly (Figure 1, first row). Both 3- and 4-year-olds overall gave correct answers when asked to compare between a speaker who said "Can you please˜" and a speaker who did not (all $t < .05$ except 3-year-olds not answering the *polite* questions correctly, see below), which suggested that children at this age do pay attention to how the speakers make requests and determine their attributes ("Because Jean said"please", Jean was nicer than Suzy") and social implications of their actions ("Fred will pour water in Jean's cup").

For other markers, the performance varied depending on the age and type of question asked. Both 3- and 4-year-olds overall seemed to struggle with the *polite* question ("Which one was more polite?"), though 4-year-olds did successfully answer that a speaker who said "Can you please˜" was more polite. 3-year-olds also struggled with the *compliance* question ("which one will [get what they want]?"), whereas they accurately answered the *play partner* question ("Which one would you rather play with?"; all $t < .05$), suggesting that at 3 years children already become sensitive to some social impli-

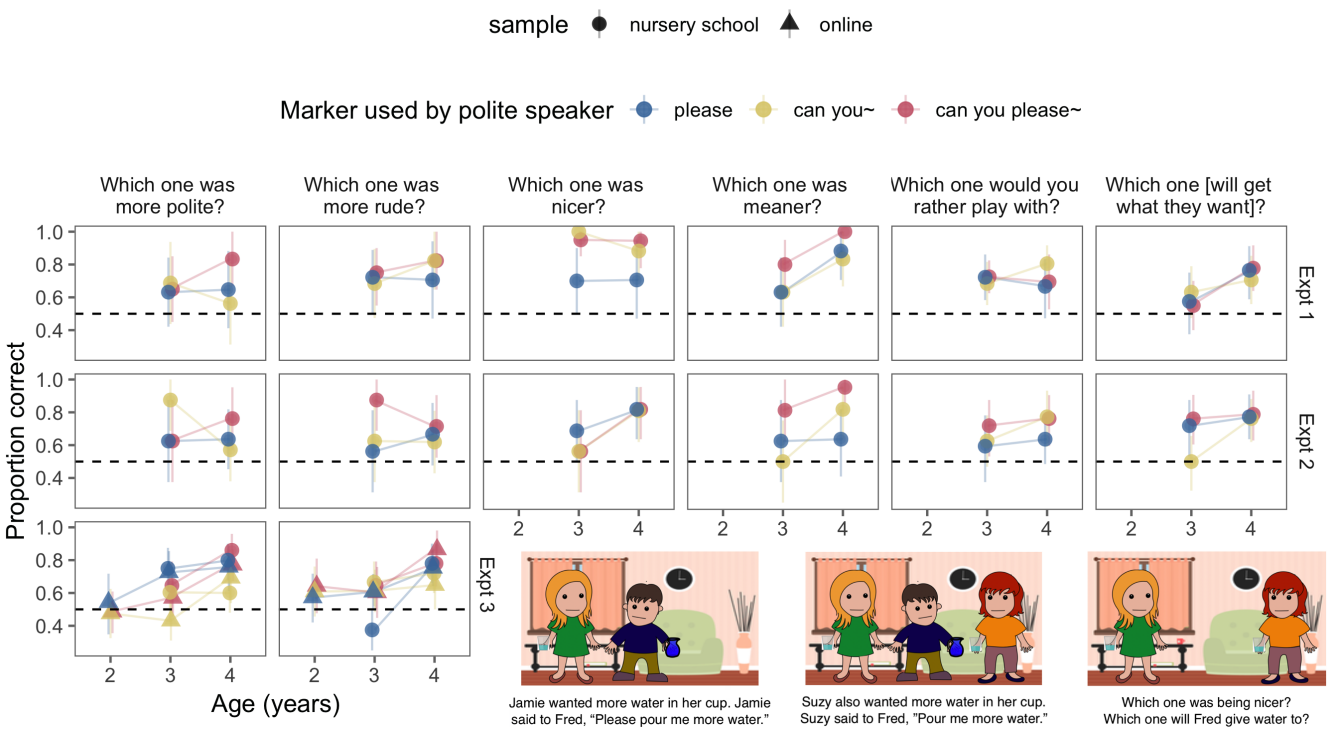

Figure 1: Bottom right: Story example. Top, left: Results. Proportion of correct responses to questions comparing between a speaker who used a polite marker (where blue indicates "please", yellow "can you", and red "can you please") versus a speaker who did not. Data are binned into one-year age groups. Each row represents data from a different Experiment. Columns represent different questions asked. Dashed line represents chance level at 50% (i.e., if participant were guessing at random).

cations of speaking politely. Improvement over age was clear, however, as 4-year-olds answered questions more accurately overall for most of the question types.

A mixed-effects logistic regression predicting accuracy based on age, question type and marker type[1] confirmed that there was an improvement with age (β = 0.2, p = 0.026), and that children answered questions more accurately about a speaker who used "can you please" compared to "please" (β = 0.28, p = 0.038).

The regression model also confirmed that children seemed to find some question types easier than others: Responses to *nice* and *mean* questions were more accurate than to *polite* and *rude* questions (β = 0.8, p = 0.002), whereas social implication questions (*play partner* and *compliance*) were overall more difficult compared to speaker attribute questions (*polite*, *rude*, *nice*, and *mean*; β = -0.33, p = 0.006).

In sum, in this first experiment, we saw preliminary evidence that children pay attention to and understand some cues to politeness and are able to use these cues to infer whether speakers are relatively polite, rude, nice or mean, and whether speakers are good play partners and are likely to gain what they wanted from their addressees. 4-year-olds answered questions accurately more often compared to 3-year-olds, but both age groups tended to be accurate when all the possible cuess were used to signal that one speaker was polite (used "can you please~", spoke with a kind tone and face) and the other speaker wasn't (did not use a polite marker, spoke with an angry tone and face).

However, one possible explanation for the finding in Experiment 1 is that children are not using the linguistic polite markers (e.g., "please") per se, and rather prosodic and facial cues that accompany these markers. That is, children may have relied on the speaker's kind voice and face rather than their use of "please" to evaluate their niceness or likeability as a play partner. Similarly, greater accuracy for some questions over others (e.g., "nice" > "polite") may have been due to greater association between some of the words and prosodic and facial cues (e.g., a kind face may be seen to signal niceness more than politeness), not due to greater understanding for those words or concepts. Another potential concern is that the experimenter was aware of the manipulations (i.e., they knew which speaker was supposed to be "polite") and

[1] for Experiments 1 and 2, we use this model structure: `accuracy ~ age x question type x marker type + (1 | item)`, where age is centered and scaled. All categorical variables were deviation coded, with specified contrasts of interest for the question type. Significance was calculated using the standard normal approximation to the t distribution (Barr, Levy, Scheepers, & Tily, 2013).

thus could have affected the presentation of these speakers in ways that are not consistent across all participants. In our next two experiments, we sought to address these issue, and remove potentially confounding cues.

Experiment 2

In Experiment 1, we saw initial evidence that children are able to use some combinations of linguistic, prosodic, and facial cues to politeness. In Experiment 2, we examined whether children are able to make similar judgments using linguistic and prosodic cues only, without facial expressions. For this, we used pre-recorded voiceovers to present speaker utterances, so that (1) we could look at children's judgments based on linguistic markers and prosodic cues only, and (2) we could remove the role of potential bias of the experimenter in presentation of these utterances.

Methods

Participants 3-year-old ($n = 16$; 8 F, M_{age} = 3.56 years, SD_{age} = 0.29) and 4-year-old children ($n = 22$; 13 F, M_{age} = 4.5 years, SD_{age} = 0.32) were recruited from a local preschool. An additional 5 children were tested but excluded due to failure on the practice questions.

Stimuli and design The design was identical to Experiment 1. Stimuli were the same as Experiment 1 except two changes: (1) Instead of a picture book, we presented the stories on a tablet; (2) the speakers' utterances were now presented as recorded voiceovers. The voiceovers were recorded by native English speakers, and contained prosodic cues that matched the presence/absence of a polite marker (e.g., "Please pour me more water" was recorded with a kind voice and "pour me more water" with an angry voice).

Procedure The procedure was identical to Experiment 1, except for the following change: The participants now had to tap on a speaker on tablet in order either to hear them speak, or to choose an answer to the questions asked.

Results and Discussion

Overall we saw similar patterns of results in Experiment 2 compared to 1 (Figure 1, second row).

Children made accurate judgments more often when the marker used was "can you please" compared to "please" (β = 0.39, $p = 0.001$)

There was an effect of age (β = 0.25, $p = 0.002$).

There was no main effect of question type, but there was an interaction between age and question type such that performance for *nice* and *mean* questions saw greater improvement with age than for *polite* and *rude* questions (β = 0.57, $p = 0.011$).

In sum, across Experiments 1 and 2, we were able to confirm that, as they get older, children get better in their use of politeness cues to respond to questions about speaker attributes and social implications, and that children make more accurate judgment to compare between speakers based on their use of "can you please" compared to "please."

Next, we wanted to see whether children are able to evaluate speakers based on linguistic markers only, without any other supporting cues such as prosodic cues or facial expressions.

Experiment 3

Methods

Participants We recruited two samples of participants: one from the same local nursery school as Experiments 1 and 2, and the other from Lookit (`https://lookit.mit.edu/`), an online platform for child research participation, in which parents and their children can participate together. The nursery school sample consisted of 3-year-old ($n = 24$; 11 F, M_{age} = 3.65 years, SD_{age} = 0.26) and 4-year-old children ($n = 25$; 13 F, M_{age} = 4.48 years, SD_{age} = 0.28). An additional 3 children were tested but excluded due to failure on the practice questions.

The online sample consisted of 2-year-old ($n = 23$; 12 F, M_{age} = 2.48 years, SD_{age} = 0.29), 3-year-old ($n = 31$; 15 F, M_{age} = 3.59 years, SD_{age} = 0.27) and 4-year-old children ($n = 27$; 12 F, M_{age} = 4.46 years, SD_{age} = 0.29). An additional 32 children were tested but excluded due to failure on the practice questions ($n = 19$) or completion of fewer than half of the test trials ($n = 13$).

Stimuli For the nursery school sample, stimuli were identical to Experiment 2 except that the voiceovers for all utterances had the same prosody: All utterances ended with a rising intonation. For the online sample, stimuli were identical to what the nusery school participants saw except that the story narration (other than speaker utterances) were also pre-recorded such that parents did not need to read the stories aloud themselves.

Procedure For the nursery school sample, the procedure was identical to Experiment 2. For the online sample, the procedure was similar except that parents and children participated together at home and there was no experimenter present. Parents accessed the webpage for the study and gave their consent for participation, and then read instructions to proceed through the different stories, which specified with an emphasis to not help their children answer the questions.

Results and Discussion

Consistent with the two previous experiments, children's responses became more accurate with age (Figure 1, third row, bottom left). All of two-year-olds' and most of three-year-olds' responses did not differ from chance level, whereas the mean accuracy for four-year-olds were above chance for almost all the question and marker types. A mixed-effects logistic regression predicting accuracy based on age, question type and marker type, controlling for sample[2] showed improvement with age in accurately responding to the questions.

[2]Model structure: `accuracy ~ sample + age x question type x marker type + (1 | item)`

One finding that deviated from the two previous experiments was that three-year-olds reliably made correct judgments to indicate a "polite" speaker when the speaker used "please." This is initially surprising because three-year-olds previously failed at this judgment given *more* cues (prosody and facial expressions), and they also failed to accurately respond to the marker "can you please" in this same experiment. (fixme: though overall "can you please" was judged more accurately than "please", and "please" was more accurate than "can you")

One possible explanation is that controlling for prosodic cues actually made it *easier* to compare the presence and absence of the marker "please."

General Discussion

Using these simple markers, 4-year-olds were consistently able to make a correct comparison between speakers regarding their relative attributes (politeness, rudeness, niceness and meanness) and social implicationss (preference for a play partner and likelihood of compliance from the addressee). 3-year-olds showed understanding of these markers in some contexts as well.

References

Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of Memory and Language*, *68*(3), 255–278.

Bates, E. (1976). Acquisition of polite forms: Experimental evidence. *Language and Context: The Acquisition of Pragmatics*, 295–326.

Bates, E., & Silvern, L. (1977). Social adjustment and politeness in preschoolers. *Journal of Communication*, *27*(2), 104–111.

Bock, J. K., & Hornsby, M. E. (1981). The development of directives: How children ask and tell. *Journal of Child Language*, *8*(01), 151–163.

Bonnefon, J.-F., Feeney, A., & De Neys, W. (2011). The risk of polite misunderstandings. *Current Directions in Psychological Science*, *20*(5), 321–324.

Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage* (Vol. 4). Cambridge university press.

Buhler, K. (1934). *Sprachtheorie*. Oxford, England: Fischer.

Clark, H. H., & Schunk, D. H. (1980). Polite responses to polite requests. *Cognition*, *8*(2), 111–143.

Ervin-Tripp, S. M. (1982). Ask and it shall be given unto you: Children's requests. *Georgetown University Roundtable on Languages and Linguistics. Contemporary Perceptions of Language: Interdisciplinary Dimensions*, 235–245.

Goodman, N. D., & Stuhlmuller, A. (2013). Knowledge and implicature: Modeling language understanding as social cognition. *Topics in Cognitive Science*, *5*(1), 173–184.

Holtgraves, T. (1997). YES, but... positive politeness in conversation arguments. *Journal of Language and Social Psychology*, *16*(2), 222–239.

Ide, S. (1989). Formal forms and discernment: Two neglected aspects of universals of linguistic politeness. *Multilingua-Journal of Cross-Cultural and Interlanguage Communication*, *8*(2-3), 223–248.

Jakobson, R. (1960). Linguistics and poetics. In *Style in language* (pp. 350–377). MA: MIT Press.

Leech, G. (1983). *Principles of pragmatics*. London, New York: Longman Group Ltd.

Nippold, M. A., Leonard, L. B., & Anastopoulos, A. (1982). Development in the use and understanding of polite forms in children. *Journal of Speech, Language, and Hearing Research*, *25*(2), 193–202.

Read, B. K., & Cherry, L. J. (1978). Preschool children's production of directive forms. *Discourse Processes*, *1*(3), 233–245.

Shannon, C. E. (1948). A mathematical theory of communication. *Bell Syst. Tech. J.*, *27*, 623–656.

Yoon, E. J., Tessler, M. H., Goodman, N. D., & Frank, M. C. (2017). "I won't lie, it wasn't amazing": Modeling polite indirect speech. In *Proceedings of the thirty-ninth annual conference of the Cognitive Science Society*.