

Children's understanding of simple polite markers

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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" 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 often, even while arguing (Holtgraves, 1997), though polite language (indirect speech or white lies) may lead to misunderstandings (Bonneton, 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, Brown & Levinson (1987)'s theory predicts 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 assumes she is 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 give 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.

Evidence for children's *comprehension* of polite speech, on the other hand, is much sparser compared to production, and have been largely inconclusive. For example, upon hearing someone making a request ("Please pour me more water"), how might children evaluate this speaker? Though there was some initial evidence to suggest that producing a request with "please" is judged to be polite by three 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 lacked statistical tests to assess each age group's performance, and did not systematically manipulate cues other than linguistic markers (e.g., prosody or facial expressions).

Thus, there are many open questions about children's understanding of a speaker's intentions behind polite speech. For example, do children know the word "polite" should be associated with politeness rules people abide by (e.g., saying "please")? Relatedly, do children recognize polite speech as being positively valenced, such that they think it is better and nicer to say polite things? Also, 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 play partners compared to those who are impolite. Finally, 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?

In this current work, we sought to answer these questions, and test what 2- to 4-year-old children understand about polite speech. Across three Experiments, we presented stories about speakers who decided to speak politely (e.g., “Please pour me more water”) or impolitely (e.g., “Pour me more water”) and asked child participants to make judgments 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 in each Experiment whether: (1) children are able to reason about speakers using polite speech as being relatively more “polite” and “nice” and less “rude” or “mean” than speakers not using polite speech; (2) they can reason about social implications of using polite speech (e.g., politeness as a sign of a nice play partner, or greater likelihood of compliance from the addressee); and (3) they show improvement with age for these lines of reasoning. We also examined the question of (4) whether children need additional cues to politeness 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 linguistic cues of interest (whether the speaker says “please,” “can you”) and other cues (facial expressions and prosodic cues) that make polite speech more salient and naturalistic. For example, we asked children to compare between a speaker who said “please pour me more water” with a kind voice and face, and a speaker who said “pour me more water” with an angry voice and face.

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 experimenter, with appropriate prosodic 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). A mixed-effects logistic regression predicting accuracy based on age, question type and marker type¹ showed there was an

¹for Experiments 1 and 2, we use this model structure: $\text{accuracy} \sim \text{age} \times \text{question type} \times \text{marker type} + (1 | \text{item})$, where age is continuous, centered and scaled. All cate-

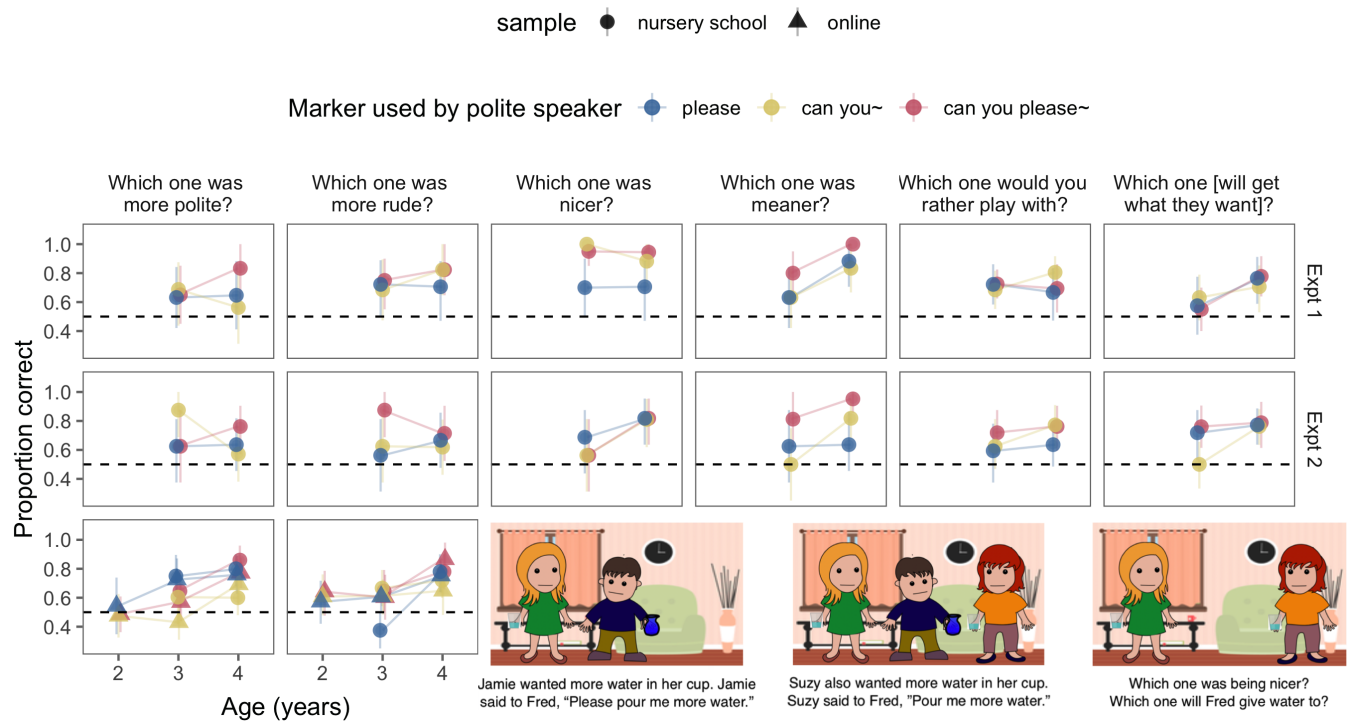


Figure 1: Bottom right: Story example. Top, left: Results. Proportion of correct responses to questions comparing between a speaker who used a polite marker (where blue indicates “please”, yellow “can you”, and red “can you please”) versus a speaker who did not. Data are binned into one-year age groups. 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).

improvement with age ($\beta = 0.2$, $p = 0.026$). The regression model also revealed 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 ($\beta = 0.8$, $p = 0.002$), whereas social implication questions (*play partner* and *compliance*) were overall more difficult compared to speaker attribute questions (*polite*, *rude*, *nice*, and *mean*; $\beta = -0.33$, $p = 0.006$).

Looking more closely at responses for each of the question type, children struggled with the *polite* question (“Which one was more polite?”) as their average accuracy did not differ from chance for almost all combinations of age and marker types (all $p > .05$ except for 4-year-olds’ performance with “can you please” marker). Children answered other questions more accurately but depending on the marker type and age. For the *nice* question, both age groups gave accurate answers given “can you” and “can you please.” For the *rude* and *mean* questions, children of both ages answered correctly given “can you please” (all $p < .05$) but only 4-year-olds performed above chance given “can you.” For the *play partner* question, children from both age groups successfully indicated the politely-speaking character as their play partner

gorical 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).

choice for all three markers (except for 4-year-olds who did not perform above chance given “please”). For the *compliance* question, only 4-year-olds answered correctly given all markers.

As for the different marker types, children overall struggled to give correct answers based on the marker “please”; only 4-year-olds successfully answered the *mean* and *compliance* question but otherwise both age groups failed to answer above chance given “please.” “Can you please,” on the other hand, tended to be judged accurately across both age groups quite consistently.

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 cues 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 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 remove these potential confounds.

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). A mixed-effects logistic regression predicting accuracy based on age, question type and marker type showed that again there was an effect of

age ($\beta = 0.25$, $p = 0.002$), and children made accurate judgments more often when the marker used was “can you please” compared to “please” and “can you” together ($\beta = 0.33$, $p = 0.019$). 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 ($\beta = 0.57$, $p = 0.011$).

For children’s responses to the speaker attribute questions, children still struggled with the *polite* question, with only 3-year-olds answering above chance given “can you” and 4-year-olds given “can you please,” but no other age group performing above chance given other markers. For the *rude* and *mean* questions, similarly to Experiment 1 results, children of both ages answered correctly given “can you please” (all $p < .05$) but only 4-year-olds performed above chance given “can you.” For the *nice* question, unlike in Experiment 1, 3-year-olds did not reach accuracy above chance for any of the markers while 4-year-olds did answer accurately given all three marker types.

For the social implication questions, results varied slightly: whereas both age groups were correct with the *play partner* question for most of the marker types for Experiment 1, 3- and 4-year-olds were only accurate given “can you please,” and only 4-year-olds answered accurately given “can you.” For the *compliance* question, however, the results shifted such that both age groups answered accurately for all three markers, except for 3-year-olds not differing from chance level. Overall, again we saw improvement with age for many of the combinations of question types and markers.

In sum, across Experiments 1 and 2, we were able to confirm that children are able to make accurate judgments about speakers given their use of polite markers, especially “can you please,” and that as they get older, children get better in their use of politeness cues to respond to questions about speaker attributes and social implications.

Experiment 3

In Experiment 3, 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.

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 nursery 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

For Experiment 3, we were able to look at how children answered the *polite* and *rude* questions given the same three marker types as before, with three age groups including 2-year-olds. Because we did not see any effect of sample in our mixed-effects logistic regression model, we report on their performances averaged across the two samples (though we do show the data separately in Figure 1).

Unlike the two previous experiments, 3- and 4-year-old children were reliably accurate in their answers to both the *polite* and *rude* questions (except 3-year-olds were not above chance for the *polite* question given “can you” and for the *rude* question given “please”). Most strikingly, whereas children consistently failed to answer these two questions given the marker “please,” both age groups were clearly accurate on the *polite* question and 4-year-olds were accurate on the *rude* question in this current experiment.

A mixed-effects logistic regression² showed improvement with age ($\beta = 0.19$, $p = 0.033$) as well as better performance for “can you please” than “please” and “can you” together ($\beta = 0.42$, $p = 0.002$), consistent with Experiment 2 results. Performance for “please” was also better than for “can you please” and “please” together, confirming our observation above: Children accurately compared between a speaker using “please” and another speaker not using it. One possible explanation is that controlling for prosodic cues actually made it *easier* to compare between two utterances. Because we had stripped all the other variations, it may have made the contrast between the presence and absence of the marker “please” *more* salient.

Additionally the regression model showed that children were better with the *polite* questions than *rude* ($\beta = -0.19$, $p = 0.04$), and that responses to the *polite* question given the marker “please” were more accurate than the *rude* question given “please” ($\beta = 0.42$, $p = 0.002$). Finally, children showed a greater improvement with age for “can you please” compared to “please” and “can you” together.

General Discussion

What do young children understand about polite speech? In three experiments, we looked at how 2- to 4-year-old children reason about making requests with or without simple polite markers such as “please”, “can you” and “can you please.” Our findings suggest that by 3 years, children pay attention to the use of polite markers to accurately judge whether that speaker is relatively more polite, rude, nicer or meaner compared to another speaker. By 4 years, they are able to reliably infer that a speaker who uses a polite marker is a better play partner and is more likely to get what they wanted from the addressee. Across all three experiments, we saw a clear developmental trend such that children improved in their reasoning about polite speech with increasing age.

Finally, though there were variations in children’s performances across the three experiments, there weren’t consistent trends that indicated having more cues to politeness is necessarily more helpful for children. In fact, Experiment 3 with no facial or prosodic cues showed greatest success by 3-year-olds to questions about who was more polite/rude, which suggests that the presence of a polite marker is enough to signal speaker attributes to children.

Our work contributes to the literature about children’s production and understanding of polite speech. Even though children have been shown to produce polite speech such as “please,” evidence has been sparse and inconclusive for whether young children below 5 years comprehend speaker attributes and intentions based on polite speech. Here, we found that children are sensitive to the use of polite markers in speech, and are able to use these markers to infer the speaker’s attributes (e.g., niceness) by 3 years, and consequent social implications by 4 years. These ages are closer to the age of first reliable production of polite speech than have been suggested by earlier work.

How does the understanding of polite markers emerge then? In order to comprehend and produce polite speech, children must identify appropriate markers to use in their speech. Children in the US are often explicitly taught and prompted to use polite markers such as “please” in their requests from early on (e.g., “What’s the magic word?”; Gleason, Perlmann, & Greif, 1984), thus they may quickly learn to use these markers as a rule in order to get what they want. They also might hear other remarks that pair polite markers with positive words (e.g., “You should be *nice* and say *please*”), which may help them learn the association between polite speech and positive attributes. Gradually, children may recognize more subtle social processes that are related to po-

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

lite speech production: Adults may praise and reward children who spoke politely, and children themselves may like peers who ask for permission to play with their toys rather than take the toys away without asking. Future work with corpus data analysis looking at these interactions between children and others may reveal important conversational patterns that help children acquire social meanings of polite speech.

There are limitations to the current work that present other opportunities for future research. Because this work looked only at the behaviors of English-speaking children in the US, it is an open question how children with different language and cultural background may develop understanding of polite speech. Cross-cultural investigation of what markers are present in other languages and cultures, as well as how those markers are acquired, will be informative.

Also, we did not manipulate the statuses of speakers or addressees. Though not explicitly stated, the visual depiction and narration used for the current work suggested that speakers were communicating with their peers only. However, one key prediction from politeness theory is that speakers will adjust their utterances based on the status of the addressees (Brown & Levinson, 1987). Indeed there is evidence that children do adjust their speech based on the listener status and age: Even at two years, children produce a polite form of request (e.g. "Can I have...") to an adult but an imperative form (e.g. "Give me...") to a peer (Corsaro, 1979; Shatz & Gelman, 1973); Children around 2.5 years were found to use less polite language with their fathers compared to their mothers (Ervin-Tripp, Guo, & Lampert, 1990). Wagner, Greene-Havas, & Gillespie (2010) showed that by 4 years, children understand that formal speech ("Excuse me please, can you tell me your name?") is addressed toward a figure of authority (e.g., a teacher rather than a little girl), but it is yet unclear what cues (linguistic markers, social cues) in formal speech children are using to make such prediction (Wagner, Vega-Mendoza, & Van Horn, 2014). Thus, future work should examine how children use cues to politeness to judge speaker intentions in different contexts, including varied status differences between speakers and listeners.

In sum, the current work showed that young children understand implications of using simple polite markers in requests. These findings fill the gap in literature about how children reason about polite speech, and pragmatics in general.

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.
- Corsaro, W. A. (1979). Young children's conception of status and role. *Sociology of Education*, 46–59.
- 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.
- Ervin-Tripp, S. M., Guo, J., & Lampert, M. (1990). Politeness and persuasion in children's control acts. *Journal of Pragmatics*, 14(2), 307–331.
- Gleason, J. B., Perlmann, R. Y., & Greif, E. B. (1984). What's the magic word: Learning language through politeness routines? *Discourse Processes*, 7(4), 493–502.
- 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.
- Shatz, M., & Gelman, R. (1973). The development of communication skills: Modifications in the speech of young children as a function of listener. *Monographs of the Society for Research in Child Development*, 1–38.
- Wagner, L., Greene-Havas, M., & Gillespie, R. (2010). Development in children's comprehension of linguistic regis-

- ter. *Child Development*, 81(6), 1678–1686.
- Wagner, L., Vega-Mendoza, M., & Van Horn, S. (2014). Social and linguistic cues facilitate children's register comprehension. *First Language*, 34(4), 299–314.
- 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*.