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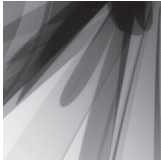
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## 'I like Barney': Preschoolers' spontaneous conversational initiations with peers

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### ABSTRACT

In the absence of scaffolding provided by adults or a play situation, what topics will preschoolers raise in attempting to begin conversations with each other? This study provides a first in-depth examination of preschoolers' peer-to-peer conversational initiations. The snack-time conversations of a class of 25 preschool children were videotaped bi-weekly for 21 weeks; 507 conversational initiations were identified and classified according to a detailed coding scheme that included utterance type (e.g., comment, question), person or object referent, person referenced (e.g., self, listener), and, of particular interest, reference to mental states. Of all initiations, 77.5% referenced persons (41.2% listener) and almost 30% referenced mental states, suggesting preschoolers are using their developing understanding of mind in finding common ground with peers.

### KEYWORDS

Conversational initiations; peer-to-peer conversation; pragmatics; preschoolers; theory of mind

If being human is about talking, it's the tittle-tattle of life that makes the world go round, not the pearls of wisdom that fall from the lips of the Aristotles and Einsteins. (Dunbar, 1996, p. 4)

'Nice weather today.' 'I like your t-shirt.' 'How do you know the bride and groom?' 'How did your coffee with Greg go?' We can all instantly recognize these utterances

as possible conversation starters – the kinds of topics we might introduce in casual conversation or small talk. Some of these utterances may be topics more likely to be introduced with a close friend rather than a new acquaintance or stranger, but, nevertheless, all these different comments and queries could be successful attempts to get a conversation started.

Despite the ‘small talk’ nature of such conversational initiations, they are no small feat, as even some adults would readily acknowledge who find making small talk very difficult and who find settings such as cocktail parties, weddings, and first dates uncomfortable for precisely this reason. For children, the task is even more difficult, given their limited skills. Indeed, researchers studying the development of conversation have proposed a number of different linguistic, cognitive, and social skills and steps that are involved in initiating a conversation.

## THE STUDY OF CONVERSATIONAL INITIATIONS AMONG CHILDREN

In the field of peer talk, many different discourse phenomena have been the focus of study (e.g., request forms and the role of status, Kyratzis & Marx, 2001; language play, Ely & McCabe, 1994; polyadic conversational monitoring, Forrester, 1988; multi-party narratives, Küntay & Senay, 2003), but conversational initiations have received only very limited attention, primarily in the work of Keenan and Schieffelin (1976) and McTear (1985). The combination of linguistic, cognitive, and social skills required places this ability firmly in the realm of pragmatics (McTear, 1985; Ninio & Snow, 1996); and indeed, the exploration of conversational initiations is a rich domain within which to study fundamental issues in relation to perspective-taking in conversation.

The most well-known account pertaining to conversational initiations is perhaps that of Keenan and Schieffelin (1976), which identified four steps that the speaker must accomplish: namely, gaining the attention of the listener, articulating the utterance clearly, providing sufficient information for the listener to identify the objects and persons referenced, and providing sufficient information for the listener to reconstruct the semantic relations obtained between referents in the discourse topic. In a separate account, McTear (1985) emphasized children’s need to shape an utterance to the needs of a listener along the lines of ‘recipient design’ (Sacks & Schegloff, 1979) including both gaining and maintaining the listener’s attention and taking account of the listener’s knowledge in the construction of the initiating utterance.

The above steps are the aspects studied in these two main studies of conversational initiations with preschool-aged children. McTear (1985) studied the conversation of two girls in six one-hour sessions from age 3;0 to 6;0, and Keenan and Schieffelin (1976) studied 25 hours of interaction between two twin boys over one year, from age 2;9 to 3;9 months. Both studies included play and non-play settings, and a primary focus of their analyses was the clarity of children’s initiations with respect to what their listener may or may not know because of what conversation

has preceded the utterance and what specific referents (e.g., people) may be known or unknown to their listener.

## THE TOPICS OF CHILDREN'S CONVERSATIONAL INITIATIONS

In the current study, in contrast, it was not the establishment (e.g., how the listener's attention is secured) or the clarity (e.g., whether the utterance contains sufficient information to identify referents) of children's conversational initiations that was of interest, but rather the *form* (e.g., question, comment) and *content* or *topic*. There has, to our knowledge, been only one previous study (Marvin, Beukelman, Brockhaus, & Kast, 1994) that specifically explored what topics preschool children talk about with each other. Peer-to-peer talk and the topic of the conversational initiations per se were not of specific interest, however. The data were collected and analyzed in situations that included child-parent and/or child-teacher talk, and the coding of 'semantic content' (i.e., the topics of conversation) was determined from segments of *extended* conversation (i.e., not just the initiating utterance, as is the focus of our study). In addition, discussion of the results was limited to only those 25 semantic content topics found to be common across all children. As far as we know, our study is the first to exclusively explore what preschool-aged children will attempt to initiate a conversation about when that talk occurs only in the company of peers with no adult present to support, guide, intervene or influence the conversation.

With respect to recipient design, consideration of the topic of children's conversational initiations can be viewed as addressing relevance or appropriateness more so than clarity. That is, one can distinguish between a conversational initiation that may be *confusing* to a listener (e.g., lacking clarity) from one that may be of *little or no interest* because it is not relevant or appropriate; albeit both types of initiations may lead to communicative breakdown due to poor recipient design. Indeed, impairment in the ability to select appropriate and relevant topics is a commonly recognized source of difficulty for individuals with language impairment in the area of pragmatics, such as individuals with autism (Fay & Schuler, 1980; McTear, 1985; Tager-Flusberg, 1981) and pragmatic language impairment (Bishop, 1998). In the words of one high-functioning adult with autism, 'I do not know what subjects to talk about with different people' (Dewey & Everard, 1975, cited in McTear, 1985, p. 236). As McTear (1985) comments, this individual's difficulty does not lie at the level of language per se, but rather 'in his ability to select appropriate topics in relation to social (and possibly personal) attributes of his listeners as well as the setting in which the conversation takes place' (p. 236).

## PEER TALK IN NON-PLAY SETTINGS

The study of peer talk has its origins in the 1970s (Ervin-Tripp & Mitchell-Kernan, 1977; Garvey, 1974, 1975; Keenan, 1974), but, as reviewed recently by Blum-Kulka and Snow (2004), has received rather unsystematic and sparse attention since this

time (for exceptions, see Dorval & Eckerman, 1984; McTear, 1985). The field of peer talk began with and continues to focus heavily on talk during play activities (Corsaro, 1985; Garvey, 1974, 1975; Hughes & Dunn, 1997; Hughes, Lecce, & Wilson, 2006; Kyratzis & Marx, 2001; Sawyer, 1997; Schober-Peterson & Johnson, 1989; Stambak & Sinclair, 1993). Nevertheless, studies with a focus on peer talk in non-play settings have begun to appear more frequently (Aviezer, 2003; Burroughs & Murray, 1992; Engel, 1997; Marvin, 1994; Preece, 1987). And indeed, non-play settings may be importantly different from play settings in two major respects. First, a non-play setting such as snack-time, dinnertime or riding in the back of a car is a more challenging environment for conversation to take place, as children cannot rely on the play theme or objects to provide topics and must seek these out in a more active manner. Second, non-play settings have been found to foster types of talk not as readily encountered in play settings, such as talk about time frames other than the present (Marvin, 1994), hypothetical talk (Burroughs & Murray, 1992), narrative talk (Preece, 1987), and autobiographical talk (Engel, 1997). The last possibility – a greater amount of talk about more personal topics, potentially referencing more content related to mental states – was a key reason that the current study employed the less common methodology of investigating peer talk in a non-play setting, specifically snack-time.

In general, peer talk has also received more attention among children older than preschool age. In our study, the conversational initiations of children just beginning to engage in conversations with each other were of primary interest. Given numerous studies documenting that conversations between children have begun to occur by 3 years of age (e.g., McTear, 1985; Ochs & Schieffelin, 1983), the current study focused on studying the initiations among a group of preschool children (age 3–5 years).

## MAIN RESEARCH QUESTIONS

In the present study, the conversations of a preschool class of 25 children were videotaped bi-weekly over a period of 21 weeks as children came informally together in small groups to sit at a table (which could seat four children) during a 45-minute snack-time. Adults were not present in the snack area, so as to allow the conversations to occur solely at the discretion of the children. The first main goal of the study was, therefore, to investigate, in the absence of any scaffolding provided by adults or a play situation, what topics preschool children would appeal to in their attempts to initiate conversation with each other by undertaking a full and detailed coding of the form and content of all the conversational initiations produced by the children.

Second, our analysis of the content of children's conversational initiations sought to determine the extent to which children's conversational initiations reflect a growing understanding of mind and include topics that show an appreciation of people as 'epistemic subjects' (Harris, 1996). Harris (1996) has argued that conversation may be an important activity by which 'children come to think of other people as epistemic subjects, or creatures who can take in, store, and exchange

information' (p. 92). In a more recent exposition of this argument, Harris (1999) also emphasizes that, as proficiency in conversation continues to develop in the toddler and preschool years, the purpose of such conversations includes not only the exchange of information but the comparison of attitudes. And indeed the inclusion of comments and questions pertaining to their own and other people's mental states, such as what is known, not known, liked or disliked, has been well-documented in a number of investigations of children's talk, albeit talk largely between adults and children (Bartsch & Wellman, 1995; Dunn, 1988; Shatz, 1994). Thus a second goal of this study was to learn whether, when preschool children attempt to initiate conversations with each other, they are able to go beyond the realm of physical events or objects to include initiations concerning their own or other people's mental states.

## METHOD

### Participants

The participants in this study were a preschool class of 25 children, comprised of 15 girls and 10 boys. The preschool was a laboratory preschool located on a university campus. At the beginning of the study, the children ranged in age from 3;5 to 4;11 ( $M = 4;2$ ) and included eight 3-year-olds and 17 4-year-olds. By the end of the study (21 weeks later), the children ranged in age from 3;10 to 5;4 ( $M = 4;10$ ) and included three 3-year-olds, 17 4-year-olds and five 5-year-olds. One child (girl) was Chinese (and in the process of learning English as a second language in addition to Cantonese). The remaining children were of West or East European backgrounds reflecting the demographic composition of the city in which the preschool is located. Among these children, one child (girl) was bilingual in Polish and English. Another child (girl) was trilingual (Polish, Persian, and English). All the children had attended the preschool for a minimum of four months prior to the start of the study.

### Procedure

In the preschool, snacks for the children were provided 'buffet style' in an open kitchen area furnished with two small square tables each with four chairs. Snacks and juice were accessible to the children in this area for a 45-minute period during their free play time. Children were free to visit this area for snacks on their own as they wished. Children were required to sit to eat their snack at one of two tables, that each seated four children. For the purposes of the study, the one table nearest to an observation window into the kitchen was outfitted with a microphone in the middle and a video camera was mounted from the ceiling above it that captured an image of the entire table and its occupants. Recording began as soon as the snack area was opened and ended when the snack area was closed to the children. Note that during any given 45-minute snack session, multiple groups of children might be recorded as children came to eat their snack, left, and other children joined the

table for various periods of time. Also, the talk recorded thus was both dyadic and polyadic at times.

Snack sessions were recorded twice a week on the same two days for 21 consecutive weeks. Two sessions out of the total 42 possible were missed due to a midwinter break at the preschool. Thus the data include the remaining 40 sessions. During data collection, as an added measure, a researcher was situated in an adjoining room with an observation window overlooking the table, and could listen to the children using headphones and a speaker system already installed in the laboratory preschool. This researcher recorded any other potentially important information that might not be captured on the video image (e.g., a visitor to the preschool) or that might be relevant to the children's talk on the day of taping (e.g., a child's birthday, a fire drill).

In addition, a second researcher took the role of the usual adult 'snack helper' that would normally have been a preschool teacher (and who would normally have conversed with the children). This person aided the children with any problems that arose (e.g., spilled juice, replenishing supplies) but remained as far away from the table as possible and did not initiate or otherwise engage in any conversation with the children.

## Transcription

All conversation recorded between the children at the snack table was initially transcribed according to the conventions of the CHAT (Codes for the Human Analysis of Transcriptions) transcription system (MacWhinney, 1995; MacWhinney & Snow, 1990) by one undergraduate research assistant who was not involved in the study, and reviewed by a second undergraduate research assistant. Any discrepancies were resolved, if possible, through discussion with the first author. Note that children's names have all been changed in the example utterances provided throughout.

## Coding

Following the completion of the transcriptions, the coding of children's conversational initiations proceeded in two steps. First, all conversation initiations were identified. An utterance was considered a conversational initiation if it met one of the four following conditions: (1) it was the first utterance following the arrival or departure of a child at the table (excluding greetings); (2) it was the first utterance following a significant pause in conversation (i.e., a pause of approximately five seconds minimum); (3) it was the first utterance following a formulaic conversational initiator such as 'Hey,' 'Guess what?' 'You know what?' or the name of a child at the table; and (4) it was the first utterance among just the children at the table following a conversation that might have occurred with another child or adult not at the table or outside of the snack room area. Note that, in all four cases, an 'utterance' could include more than one sentence as transcribed if it was all uttered as one unit and in one continuous turn (e.g., 'Do you know what song I was singing? The Queen Esther song.').

<b>1. Non-person related initiations</b>			
<i>Utterance type</i>	<i>Person referent</i>	<i>Semantic content</i>	<i>Time</i>
<ul style="list-style-type: none"> <li>• Comment</li> <li>• Question</li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>• Object</li> <li>• Action</li> <li>• Event</li> </ul>	<ul style="list-style-type: none"> <li>• Past</li> <li>• Present</li> <li>• Future</li> </ul>
			<i>Location</i>
			<ul style="list-style-type: none"> <li>• Table</li> <li>• Preschool</li> <li>• Outside preschool</li> </ul>
<b>2. Person-related initiations</b>			
<i>Utterance type</i>	<i>Person referent</i>	<i>Semantic content</i>	<i>Time</i>
<ul style="list-style-type: none"> <li>• Comment</li> <li>• Question</li> <li>• Directive</li> <li>• Rule/modal</li> </ul>	<ul style="list-style-type: none"> <li>• Self</li> <li>• Listener</li> <li>• Self + listener(s)</li> <li>• All</li> <li>• Other child at table</li> <li>• Absent person(s)</li> <li>• Self + absent person(s)</li> <li>• You (one)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Non-mental state</i></li> <li>• Action</li> <li>• Event</li> <li>• Physical location, feature, state, ability</li> <li>• Behavioural feature</li> <li>• Possession</li> <li>• <i>Mental state</i></li> <li>• Perception</li> <li>• Desire</li> <li>• Preference/aversion</li> <li>• Emotion</li> <li>• Belief</li> <li>• Cognitive feature, ability</li> </ul>	<ul style="list-style-type: none"> <li>• Past</li> <li>• Present</li> <li>• Durative</li> <li>• Future</li> </ul>
			<i>Location</i>
			<ul style="list-style-type: none"> <li>• Table</li> <li>• Preschool</li> <li>• Outside preschool</li> </ul>
3. Fantasy talk (no further subcodings)			
4. Games, jokes, and tricks (no further subcodings)			

**Figure 1** Four main coding categories and relevant subcodings for all conversational initiations



Second, each conversational initiation was then subjected to a further in-depth coding using a coding scheme developed for this study and outlined in Figure 1. In this coding, an utterance was first assigned to one of four main categories defined as follows. Examples are provided from the transcripts in parentheses.

1. *Non-person related*: The content of the initiation was solely about an object (e.g., food, toys) and did not contain any reference to a person(s) either by name or using a pronoun ('It's lemonade, pink lemonade.').
2. *Person-related*: The content of the utterance was about a person(s) ('Erik, you are a picky eater.'). Note that utterances did not have to contain a name or pronoun to be considered person related if the content was nevertheless clearly person related such as an action being engaged in by the person and commented upon ('That's rude!').
3. *Fantasy talk*: The content of the utterance involved pretence, the hypothetical, imaginary or impossible ('If you had 22 shirts on you'd be pretty hot'; 'Emelia, we need to go get a doctor,' said as the head of a teddybear-shaped cookie broke off).
4. *Games, jokes, and tricks*: Utterances were coded as games when the content of the utterance involved description of an activity engaged in for amusement ('How about we do say funny words?'). Utterances were coded as jokes when they took easily recognizable canonical joking forms, such as knock-knock jokes. Utterances were coded as tricks when the utterance was aimed at deceiving the listener in an amusing way ('Look! There's a monster behind you.').

The latter two categories did not undergo further coding with respect to their content in this study. However, non-person and person-related utterances were categorized further according to their utterance type, person referent (for person-related initiations only), semantic content, time referent, and location, as will now be described and illustrated by examples from the transcripts.

### *Utterance type*

Initiations were categorized as a *comment* ('I'm coming to your house. '), *question* ('Did you ever dip your banana in your juice?'), or, for person-related utterances only, a *directive* ('Don't do that!') or a *rule/modal* ('Sierra, you only can have one drink.').

### *Person referent*

Person-related initiations received this coding and the categories included: the *self* ('My leg is tired of walking. '); the *listener* in a dyadic conversation ('Aaron, do you want to wait for me after you are done?'); the *self and listener(s)* ('We forgot our cups,' as referenced by use of the terms 'we,' 'let's' or 'us'; *all the children at the table*); ('We should all go to that table. '); *another child at table* who is not currently part of the conversation and to whom the utterance is not directed but is about ('He always spills his juice. '); an *absent person(s)* not present at the table ('My teacher in gymnastics is called Alyse. '); the *self and absent person(s)* ('We have a new TV. '); and use of 'you' in the sense of the universal 'one' ('In chess, you can't move your bishop on black only if the bishop's on black.').

### *Semantic content*

Given the large number of possible categories related to this coding, the three non-person and 10 person-related categories (divided into non-mental state and mental-state related) are described in Figure 2 along with accompanying illustrative initiations from the transcripts. Note that, when coding for the inclusion of belief terms, use of the formulaic conversational starter '(Do) You know what?' was not included.

### *Time*

All initiations (except non-person related object) were coded as a reference to something in the present or the near, immediate, or distal past or future. *Present* was defined as presently occurring at the time of the utterance. *Distal*, *near*, and *immediate past* were defined, respectively, as something that occurred before preschool began on the day of videotaping, or at preschool but before snack, or prior to the utterance at snack-time. *Immediate*, *near*, and *distal future* were defined respectively as something that was anticipated to occur during the remainder of snack-time, at preschool on the day of taping but after snack, or after preschool had ended for the day. For person-related utterances an additional coding category was created, *durative*, to capture something ongoing in the present but not in the 'here and now' of the preschool, such as the initiation 'I'm looking for a new bike.'

### *Location*

Non-person related initiations were all coded with respect to whether the object or event referred to was located in the *snack room*, outside the snack room but in the *preschool*, or *outside the preschool*. For person-related initiations, this coding was appropriate only for the semantic categories of action, event, physical location or possession.

### *Age and sex*

Every initiation received a coding with respect to the age and sex of the speaker. Every initiation also received a coding identifying the sex of the other child(ren) at the table using one of the following five codes: boy, girl, boy group, girl group or mixed-sex group.

## **RESULTS**

### **Total number of initiations, reliability of coding, and time spent in conversation**

A total of 585 utterances were identified as conversational initiations. Of these, 10.9% were deemed 'uncodable,' most often due to muffled or very quiet speech. In a further 2.4% of cases, a child simply uttered a conversational initiator such as 'Hey!' 'Guess what?' or 'Know what?' with no further speech ensuing by the speaker or listener. Omitting the above uncodable utterances and the utterances containing nothing more than the conversational initiators above, 507 initiations

<b>Non-person related initiations</b>		
<i>Semantic category</i>	<i>Definition</i>	<i>Illustrative example</i>
Object	Naming of object or reference to static properties	'There's things in the apple juice.'
Action	An object's action	'Oh! Spill!'
Event	An occurrence, happening or activity without mention of person(s)	'The big fire drill!'
<b>Person related initiations</b>		
<b>Non-mental state categories</b>		
<i>Semantic category</i>	<i>Definition</i>	<i>Illustrative example</i>
Action	A person's voluntary action(s)	'I drank my juice and spit it back in!'
Event	An occurrence, happening, or activity with mention of person(s)	'I went cough and that [food] went flying right there.'
Physical (a) location, (b) feature, (c) state or (d) ability	(a) A person's whereabouts, (b) outward appearance, (c) condition (e.g., health, energy, growth state) or (d) ability to do something by physical means	(a) 'Where did Julia go?' (b) 'I'm wearing my favorite Batman shirt again.' (c) 'I'm growing!' (d) 'I'm good at soccer. I'm good at that.'

Behavioral feature	Aspects of a person's character or patterned way of acting	'You always spill it all over yourself.'
Possession	(a) Ownership or (b) social connections possessed	(a) 'I have a new Pokémon toy.' (b) 'Are they your friends?'
<b>Mental state categories</b>		
Perception	A person's sensory experience of seeing, hearing, smelling, tasting or touching	'I watched the Little Mermaid before.'
Desire	A person's hopes, wants or needs	'Megan, want to look at my name tag?'
Preference/aversion	A person's likes or dislikes	'I don't like raisins.'
Emotion	A person's emotional state	'I am glad Alex came over to my house 'cause he lost this many teeth!'
Belief	A person's knowledge state	'You know how to get to my house but the other kids don't, do they?'
Cognitive (a) feature or (b) ability	(a) Aspect of a person's character in regards to mental operations, (b) ability to do something by mental means	(a) 'I'm smart.' <sup>a</sup> (b) 'I can count to ten.'

**Figure 2** Semantic coding categories for non-person and person-related initiations (non-mental and mental state) along with their definition and an illustrative example

<sup>a</sup> Denotes an illustrative example not from the transcripts because this category was never observed.

remained that were the focus of the analyses reported. Of these 507 initiations, 172 (34%) were preceded by a conversational initiator. Fifty percent of the 507 initiations received a second independent coding for reliability purposes by a researcher not involved with the study. Reliability was found to be excellent, with agreement on all aspects of an utterance's coding in over 90% of cases.

## Time children spent in conversation overall

For each of the episodes throughout all the recordings where more than one child was present at the snack table, and conversation could potentially take place, the time (to the nearest second) was calculated. The sum of these times was calculated (Total Time) and the subset of this Total Time that (1) conversation took place between participants at the table, (2) children sat in silence, and (3) relatively rarely, child(ren) were engaged in conversation with someone beyond the table (e.g., spoke to another child in the adjoining playroom). Total Time was calculated to be 11 hr 45 min 36 sec. Forty-five percent of this time (5 hr 17 min 23 sec) was spent in conversation, 44% in silence (5 hr 7 min 46 sec), and 11% (1 hr 20 min 27 sec) conversing with others not at the table.

The results of this analysis, we believe, should serve as a reminder that engaging in conversation is not a simple affair for preschool-aged children. Sometimes just sitting in silence is easier! Informally, as this proved beyond possibility to code accurately, we would note that during the periods of silence, children were not oblivious to their peers, but rather would be watching them eat and/or drink and even engage at times in imitative behavior of these actions in a manner similar to the findings of early imitative behaviors among preverbal toddlers (e.g., Didow & Eckerman, 2001).

## Number and age of children contributing initiations

One girl never chose to attend snack-time, and so the data comprise the initiations of the remaining 24 children. Of the 507 initiations overall, 51.1% were produced by boys and 48.9% by girls. The frequency of contributions ranged from 1 to 58 per child, with a modal value of 17. Of the top four contributors, whose frequencies ranged from 40 to 58, two were boys and two were girls. Of the 507 initiations, 5.3%, 78.7%, and 16% were contributed by children at age 3, 4, and 5, respectively. Thus the data are best viewed as representing the speech of 4-year-old children, especially given that the 5-year-olds were at maximum 5;4 years of age.

Of the 507 initiations, 384 (75.7%) occurred in dyadic situations (one speaker with one listener as opposed to larger 3+ groups of children) and of these the configuration of speaker-listener with respect to sex was: 22.1% boy-boy; 24.7% girl-girl; 14.6% boy-girl; 14.4% girl-boy).

## Frequency of the four main categories of initiations

The clear majority of initiations, 77.5%, were related to persons, such as 'I didn't have a very big breakfast,' as opposed to being about non-person related topics,

such as the food being eaten, which accounted for only 14.0% of all initiations overall. Much more infrequently, the initiations were about fantasy topics (6.9%) or games, jokes, and tricks (1.6%). These percentages are similar when analyzed as a proportion of boys' and girls' total initiations separately, as shown in Table 1.

Person-related initiations were produced by all 24 children. Of the total person-related initiations, 51.4% were produced by girls and 48.6% by boys. Non-person related initiations were produced by 12/14 girls and 9/10 boys. Of the total non-person related initiations, 45.1% were produced by girls and 54.9% by boys. Initiations related to fantasy, games, jokes, and tricks were produced by only 4/14 girls, compared to 9/10 boys, and only the boys were observed to produce game, joke, or trick type initiations.

Given the majority of initiations were person related, and the greater interest in these in this article, they are the sole focus of the detailed analyses to follow. The non-person related initiations are not described further, except to note that 90.1% of these initiations were comments and 9.9% were questions. These initiations were largely about objects (81.7%) or the actions of objects (14.1%) situated at the table (91.5%) and talked about in the present tense (84.6%).

## Person-related initiations

Children's person-related initiations are now described in terms of the four main remaining aspects coded: the type of utterance, the main person(s) referred to, the coding with respect to semantic content, and the coding with respect to time and location. All codings are presented as a percentage of the total number of person-related initiations overall (i.e., 393 initiations [77.5%] of the 507 total initiations), except when presented by sex, in which case they are presented as a percentage of the total number of person-related initiations for girls and boys separately. All example utterances provided are from the transcripts.

### *Utterance type*

Comments comprised the majority (56.0%; 'I am four years old.') of person-related initiations. The next most frequent were directives (21.4%), in which children often asked each other to look at something ('Look at this.') or do something ('Aidan, wait for me.'). Questions were nearly as frequently observed as directives (17.8%;

**Table 1** The percentage of children's, girls', and boys' initiations in the four main categories

<i>Category of initiation</i>	<i>All children (N = 507)</i>	<i>Girls (N = 248)</i>	<i>Boys (N = 259)</i>
Non-person related	14.0	12.9	15.1
Person-related	77.5	81.5	73.7
Fantasy	6.9	5.6	8.1
Games, jokes, tricks	1.6	0	3.1

'lan, are you playing with the snowboarder?'). Initiations about rules/modals comprised the remaining 4.8% ('It says one, Ethan,' referring to the sign telling children they could have one cookie for snack). These proportions analyzed by sex separately were very similar, with the proportion in any of these four categories falling within  $\pm 1.6\%$  at most (see Table 2).

### *Person referent*

Who was referenced in children's initiations? Interestingly, initiations about the listener (41.2%; 'Do you like peaches?') were the most frequent, albeit initiations about the self followed closely behind (39.4%; 'I'm gonna have a swimming pool party.'). These percentages were similar when analyzed separately for girls and boys. In addition, at the individual level, 9/14 (64%) girls and 6/10 (60%) boys produced a greater percentage of initiations about the listener than the self.

The next two most frequent referents were to an absent (third) person (8.1%; 'My dad dropped me off at school.')

and to the self + listener(s) (5.6%; 'We never saw each other for a long time.'). In total, one of these four referents was the focus in 94% of all initiations, with the remaining four referents (all, other child at table, self + absent person(s), one) comprising the remaining 6%.

**Table 2** The percentage of children's, girls', and boys' person-related initiations with respect to utterance type, person referenced, time, and location<sup>a</sup>

<i>Category of initiation</i>	<i>All children</i> ( <i>N</i> = 393)	<i>Girls</i> ( <i>N</i> = 202)	<i>Boys</i> ( <i>N</i> = 191)
<i>Utterance type</i>			
Comment	56.0	55.5	56.5
Question	17.8	18.8	16.8
Directive	21.4	19.8	23.0
Rule	4.8	5.9	3.7
<i>Person referent</i>			
Self	39.4	37.6	41.4
Listener	41.2	40.6	41.9
All other categories	19.3	21.8	16.7
<i>Time</i>			
Present	60.3	57.9	62.8
Durative	17.6	18.8	16.2
Past (immediate, near, distal)	13.0	12.9	13.1
Future (immediate, near, distal)	9.1	10.4	7.9
<i>Location (N = 224)</i>			
At table	75.9	71.1	80.9
In preschool	10.3	13.2	7.3
Outside preschool	13.8	15.8	11.8

<sup>a</sup> For semantic content see Table 3.

*Semantic content*

This coding addressed one of the main questions of interest in this study, namely what were the topics of children's initiations pertaining to people? In Table 3, the percentage of initiations falling into each category are shown, for children overall and for girls and boys separately. The largest number of initiations – close to half, 46.8% – pertained to people's actions. References to the physical location, feature, state or ability of persons accounted for the second largest category of initiations (10%). Within the remaining three non-mental state categories of initiations, a further 6.6% pertained to events, 5.9% pertained to physical possessions, and 2.8% pertained to behavioral features.

Despite the first two most frequent categories relating to the (non-mental) actions and physical aspects of persons, children did demonstrate an ability to incorporate their developing understanding of mental states in their initiations with peers. That is, the third, fourth and sixth most frequent categories, accounting for 22.6% of all conversational initiations, referenced the mental states of perception, belief, and

**Table 3** The percentage of children's, girl's, and boy's total person-related conversational initiations in the non-mental and mental semantic categories coded, presented in order of frequency with examples from the transcripts

<i>Semantic category</i>	<i>Example from transcript</i>	<i>Overall (N = 393)</i>	<i>Girls (N = 202)</i>	<i>Boys (N = 191)</i>
<i>Non-mental state</i>				
Actions	'I curled up my fingers to make a fist.'	46.8	44.1	49.7
Physical location, feature, state, ability	'I'm getting cold.'	10.0	9.4	10.5
Event	'After this, we can go to the computer room.'	6.6	8.9	4.2
Possession	'I got a batman shirt like that.'	5.9	5.0	6.8
Behavioral feature	'You always spill.'	2.8	3.5	2.1
<i>Mental state</i>				
Belief	'Matthew, did you know I don't eat those? I don't eat popcorn.'	8.1	7.4	8.9
Perception	'I see you have slippers on.'	8.4	7.4	9.4
Desire	'I want juice.'	6.1	7.9	4.2
Preference/aversion	'I like Barney.'	4.8	5.9	3.7
Emotion	'I'm glad Alex came over to my house 'cause he lost this many teeth!'	0.3	0	0.5
Cognitive feature, ability	'I can count to ten.'	0.3	0.5	0



desire. If preferences/aversions are also included, this percentage rises to 27.4%. A fuller sense of what these initiations addressed is possible from looking at some of the most common forms. Perception-related initiations usually took the form of children asking each other if they had seen something ('Tyler, did you see Isaac run in the music room?'). Desire-related initiations were often related to asking whether a certain snack item was wanted ('Does anybody wants to have lots of juice?'). Belief-related initiations most often took the form of questions starting with 'Do you know . . .?' such as 'Do you know I can't drink milk?', although other belief terms were observed such as in the comment, 'I remember this one time Nicole's mom got a flat tire.' Initiations about preferences and aversions were usually related to food items ('I love peaches.'). Initiations referencing emotions or cognitive abilities were almost non-existent (0.6%) and initiations referencing cognitive features were not observed.

### *Time*

Of all initiations, the majority (60.3%) were about something in the present ('I'm almost done my banana.'). The next most frequent time referents were the durative (17.6%; 'Do you have a new TV in your room?'), past (13.0%), and future (9.1%). These percentages were similar when analyzed for girls and boys separately (see Table 2). Of initiations referencing the past, 8.1% referenced the immediate past ('I had a spill there.'), 4.1% the distal past ('James, did you know I made ice cream?'), and 0.8% the near past ('My dad dropped me off at school.'). Past talk was notable among initiations pertaining to perceptions and beliefs. Of initiations referencing the future, 4.3% referenced the immediate future ('Are you gonna fill your whole cup?'), 3.6% the distal future ('You can't come to my house tomorrow. Do you want to come to my house the day after?'), and 1.3% the near future ('Today, I'm gonna come to your house.'). Future talk was notable in initiations with a person referent pertaining to self + listener(s), in which future plans for activities together tended to be the topic.

### *Location*

For only a subset of the person-related initiations (i.e., actions, events, physical locations, and possessions) was this coding appropriate. This subset comprised 224 utterances and, of these, the majority referenced something in the snack room (75.9%; 'I'm sitting right beside you.'). For 13.8% of the remaining initiations, something located outside of the preschool was referenced ('I can't wait until I go to Julia's for a sleepover.'). and for 10.3%, something outside of the snack room but inside the preschool ('Uh oh, someone's running in the hallway.'). These percentages were similar when analyzed for girls and boys separately (see Table 2).

## **DISCUSSION**

### **The results in relation to our research questions**

This study has produced one of the largest longitudinal data sets of 4-year-old children's spontaneous talk with peers in a non-play setting and in the absence of

any adult speakers. The analyses of these transcripts focused on two main questions: (1) what kinds of topics would preschool-aged children raise in their attempts to begin conversations with each other, and (2) would their conversational initiations reflect their growing understanding of the mind and include initiations concerning their own or other people's mental states? This discussion highlights our main findings, focusing on those that are novel, that differ from previous findings, or that may have interesting applied importance. We also consider our results within the context of more recent arguments of the importance of peer talk to pragmatic development.

From the overall coding of children's conversational initiations examining their main kind and semantic content, one of the clearest findings was that children's conversational initiations overwhelmingly addressed topics that were person related as opposed to being solely object related: 77.5% of children's topic initiations were person related. That preschool-aged children's conversational initiations include person-related topics has been evident in previous studies, but no previous study has specifically addressed the proportion of person-related versus object-related talk. It would not be unreasonable to assume that at this young age object-related initiations would be predominant, especially given the more challenging non-play conversational setting. Nevertheless, our results make it clear that this was not the case, and person-related initiations were the most frequent to occur.

A second clear finding was that children's initiations were in comment form more than half of the time, and in a non-question form (i.e., comment, directive or rule) over 80% of the time. Questions were observed very infrequently – less than 20% of the time. (Similar results were also found with respect to the non-person related initiations.) One might have anticipated that children's topic initiations would be largely in the form of questions, as asking questions seems a natural way to begin a conversation with another person (indeed, as adults we would probably acknowledge beginning conversations with children very often with questions!). But this is not what preschool children in our study did. They were most likely to begin conversations with each other by commenting on something, and if they didn't do this, then they were most likely trying to direct their listener to do something, such as look at something. The relatively low frequency of questions among children's initiations deserves further study. For example, might knowing what question to ask be simply a more difficult 'common ground' problem and thus be observed only among much older children? Or might it be the case that comments are always the predominant manner in which children begin a conversation with peers regardless of age? It is interesting to note that even in research addressing topic selection in adults, no clear answer can be found as to whether adults are more likely to initiate conversations using questions or comments (Cheepen, 1988; Schneider, 1987).

A third finding from this study that may have been surprising to readers is that, despite the young age of the children, their conversational initiations were as often about a topic relevant to the listener as to themselves. One might have anticipated the opposite if one presumed 4-year-old children to be relatively egocentric. However, this study suggests, as have other studies examining other domains of linguistic and pragmatic competence (Andersen, 1990; Short-Meyerson & Abbeduto, 1997), that 4-year-olds do adapt their utterances to the perspective of a listener quite

readily in certain situations. Our study did, however, find a much greater proportion of listener-directed initiations compared to the one other previous study of topic initiations (Marvin et al., 1994) in which only about 20% of children's topics concerned a peer. We would attribute the lower frequency observed in Marvin et al. to the fact that their study included play and home settings in which parents and other adults such as teachers were present with whom children could talk.

With respect to the second main question of interest in this study – do children's initiations reflect their growing understanding of mental states – the answer was quite a clear 'yes.' Almost one-third of children's initiations made mention of a mental state in themselves or another person. In particular, asking about perceptions (e.g., 'Did you see . . .?') or beliefs (e.g., 'Do you know . . .?') were both prominent forms that such initiations took. Again, this proportion is much higher than that found in Marvin et al. (1994), who noted topics concerning 'person's character, traits or health conditions' less than 5% of the time, most likely again due to the differences in methodology already noted. We would argue, however, that our finding is consistent with previous studies demonstrating that by 4–5 years of age children do show evidence of being able to build more personal connections in peer-to-peer conversations, especially if the setting is a non-play setting such as a car ride. In her large study of children's narratives while being driven to and from school, for example, Preece (1987) found personal anecdotes to comprise the largest amount of children's narrative talk. This is in stark contrast to free-play situations in which preschool children's talk has been found to relate more to concrete referents, the assignment of roles, and the management of the events to be played out (Schober-Peterson & Johnson, 1989). Indeed, even within the literature on children's conversations about the mind with family members and peers, in which preschool-aged children and younger have been clearly shown to reference mental states during play (especially pretend play, e.g., Hughes & Dunn, 1997), such mental state references functioned largely to direct the interaction (e.g., 'Let's pretend we're going to the mall') and modulate assertions (e.g., 'I know it's in there') rather than to build more personal connections or talk about more personal mental states (e.g., Brown, Donelan-McCall, & Dunn, 1996). Our study has demonstrated more clearly the types of mind-related talk that occur among preschool-aged children in non-play settings. And the fact that we found preschool-aged peers able to initiate conversation about mental states fits well, we believe, with findings that, at even younger ages, children's talk within home environments encompasses such topics (Bartsch & Wellman, 1995; Dunn, 1988; Shatz, 1994).

But many questions remain for further study regarding such mind-related initiations. For example, is children's understanding of the mind a prerequisite for engaging in such talk with other peers, or might peer-to-peer talk present unique opportunities for children to build their understanding of mind? The former may seem more intuitive, but recently researchers have put forth arguments that conversations play a fundamental role in developing social-cognitive understanding and in bringing about fundamental changes in children's capacity to conceptualize persons in psychological terms (de Rosnay & Hughes, 2006; Harris, 1999; Harris, de Rosnay, & Pons, 2005). Moreover, in the present study, consider the finding that children who mentioned belief states were often querying the knowledge of their

peer. Would this be as likely to occur in child–adult speech? Indeed, in one study to date (Brown et al., 1996), mental state talk was found to occur significantly less often in child–mother versus child–sibling and child–friend discourse. Peer-to-peer conversation may indeed provide a relatively unique opportunity for children to make use of their growing understanding of mind in a manner they would not with adults.

Interestingly, given that in the literature on children's understanding of mental states, emotion understanding precedes belief understanding (Bartsch & Wellman, 1989; Harris, Johnson, Hutton, Andrews, & Cooke, 1989), children's initiations almost never referenced emotion and feeling states. The reason for this is not clear, and offers another avenue to explore in future research. It may simply be that the snack-time setting did not generally result in situations where emotional content or displays were prominent (as opposed to play situations or family settings where events, e.g., conflicts, misbehavior, might more readily lead to such displays and talk).

### Children's conversational initiations: Adapted to peers?

Certainly, devising conversational initiations that reference the listener and even perhaps his or her mental states represents a good first step in ensuring relevance or appropriateness for a peer. But did our data reveal any further adaptations that would have likely enhanced the relevance and appropriateness of children's initiations for peers? This discussion must be considered speculative at present, but the preliminary results raise a number of intriguing questions for possible further study.

One first indication of the possible adaptation of their conversational initiations in this respect may be some of the adaptations that appeared to be made depending on the sex of participants (although this was not a focus of the present study). For example, it was only by boys that initiations of the type games, jokes, and tricks were produced. Differences in talk among preschool-aged boys and girls have been found in other studies specifically exploring sex differences (Kyratzis, 2001; Nakamura, 2001), and so these findings are consistent with previous research, albeit with respect to an aspect of their conversation (small talk) not previously studied. More specific conclusions must await further study.

A potentially richer and more intriguing form of adaptation meriting further study that we observed in our data pertained to adaptations that appeared to reflect a peer-culture, and indeed a preschool peer-culture with its own fairly unique fascinations (e.g., underwear, rules, things that are gross)! Such talk will be readily familiar to any adult who has spent time with this age group, but what we believe is significant is not that adults know that children talk about these topics, but that preschool children also appear to be well aware that these are topics to be shared with peers. A glance again at some of the example initiations provided throughout this article and in Figure 2 and Table 3 quickly reveals a broad range of conversational initiations that appear to reflect an adaptation to preschool-age interests and be quite different from anything children would have heard adults say in initiating conversation with them (e.g., 'I have a batman shirt just like that,' 'I like Barney,' 'I went cough and that [food] went flying right out there.'). Such initiations did at times lead to some of the most entertaining segments of conversation (for

the experimenters!). For example, the comment about Barney led to the following exchange:

*Julia:* I like Barney. I enjoy Barney.

*Megan:* I did.

*Julia:* I watch Barney.

*Megan:* I, I, I do.

*Julia:* Do you watch Barney, because I enjoy Barney.

*Megan:* I do. Teletubbies drive me crazy!

*Julia:* I don't like Teletubbies.

*Megan:* Sometimes I like it, I sometimes don't.

*(Elise joins the table, and Julia says to her:)*

*Julia:* I like Teletubbies. Do you like Teletubbies?

*Elise:* I like Teletubbies too.

*Julia:* Me too. I don't like Teletubbies as much as I like Arthur.

*Megan:* I do.

*Julia:* I like both of them.

*Megan:* Me too. I like them both.

Indeed, one question for further study may be whether such peer-culture related comments are indeed more likely to lead to greater success in establishing a more extended conversation than other types of possible initiations.

Such peer-culture related initiations, along with the initiations discussed earlier incorporating a greater awareness of mental states, also lend support to recent arguments that peer talk may be a crucial site for pragmatic development. In a recent review of the study of peer talk, Blum-Kulka and Snow (2004) highlight an emerging focus on pragmatic skills as a central part of the developmental challenge of the language learning, a view that is echoed by many other researchers and clinicians (Gallagher, 1991; Paul, 2001) and is bolstered by the increasing recognition of pragmatic impairments among various clinical groups (Rice, Warren, & Betz, 2005). Blum-Kulka and Snow (2004) argue that available research strongly suggests that peer talk may be a 'crucial site for pragmatic development' (p. 294). For example, the more equal participant structure of peer groups, and the greater explicitness required by peers with similarly limited language abilities, may be more conducive to cognitive and pragmatic development (Rogoff, 1990). In addition, peers may present children with opportunities for types of talk very different from what can be experienced with adults. Just as we have suggested earlier in the article, for example, Blum-Kulka and Snow (2004) argue that conversational initiations among peers may reference a shared 'peer-culture' or age-appropriate peer interests that might be quite different from what children would attempt in initiations directed at adults. As such, peer talk may play an important role in children's co-construction of their social and cultural worlds (Blum-Kulka & Snow, 2004; Heath, 1983; Rogoff, 2003). We would add, in particular, that non-play settings, such as snack-time explored in this study, may provide some of the best opportunities for children to adapt their talk to more personal perspectives and mental states as well as to the peer culture to which they and their listener(s) (and crucially not adults) belong.

## CONCLUSION

Our attempt to learn more about how preschool-aged children first begin to attempt to initiate conversations with each other can be considered important within the larger context of learning about children's conversational ability. That is, conversational ability has been demonstrated to be important for the development of children's social competence (Dodge, 1983; Gottman & Parkhurst, 1980), especially their interactions with peers and the establishment of friendships (Fujiki, Brinton, & Todd, 1996; Gertner, Rice, & Hadley, 1994; Rubin, 1980). Second, deficits in conversational ability have been shown to be related to later academic difficulties (Leonard, 1998; Loban, 1976). And third, information about the normal development of conversational ability may aid in the diagnosis of pragmatic deficits in this ability and the provision of appropriate and effective intervention for preschool-aged children.

Indeed, the findings of this study may suggest specific adaptations when attempting to improve preschool-aged children's ability to initiate conversations with peers. For example, in contrast to techniques focusing on requests (e.g., mand-model explored by Venn et al., 1993), our results would suggest that the use of utterances that are in comment form may be particularly important. Interestingly, research examining strategies promoting effective peer-mediated social communication intervention has also supported the use of more 'descriptive' peer talk rather than the use of questions and requests (e.g., Goldstein & Ferrell, 1987; Goldstein, Schneider, & Thiemann, 2007). Taking into account the different kinds of initiations girls versus boys are likely to make may also be important, although this aspect requires further study dedicated solely to this aspect.

Our results may also serve as a reminder of what a difficult task starting a conversation is! Indeed, when the total time of children in conversation was tallied against the total time the children spent sitting at the table together at snack-time, almost half the time the children sat in silence eating with each other. It was clearly not the case that all conversations began easily. This is readily understandable when one considers the linguistic, cognitive, and social skills that must come together to initiate a conversation.

Nevertheless, we emphasize the extent to which children appeared to be making the most of their developing understanding of people, their behaviors, characteristics, mental worlds, and interests, in attempting to find common ground with their peers. After all, finding this common ground is crucially important as it allows children to build and develop social connections with each other and pursue those forms of communication that make our everyday interactions with others enjoyable, namely the small talk in which we are able to relate our exploits, compare likes and dislikes, talk about future plans, and joke around.

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