Astronauts and Sugar Beets: Young Girls’ Information Seeking in Family Interactions

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ABSTRACT
This paper presents preliminary results from a study examining young girls’ information seeking in family interactions. Video recordings of everyday interactions of families with girls between the ages of 3 and 6 years were coded for instances of information seeking, which were then analyzed using the methodology of conversation analysis. Results indicate that young girls’ information seeking typically occurs in response to ongoing talk and action, with few instances of information seeking unrelated to the locally immediate context of the family interactions.

Keywords
Information seeking, information practices, children, conversation analysis.

INTRODUCTION
It has been said that “curiosity is a hallmark of childhood” (Strasburger, Wilson, & Jordan, p. 13). Children begin engaging in active behaviors that prompt others to provide information that contributes to their understandings of the world from very early on in their lives, even before they gain the ability to speak (Chouinard, 2007). One of the ways in which children begin to make sense of the world around them is by asking questions of others, a behavior that has been well-documented by researchers of child development (e.g. Chouinard, 2007; Harris, 2000; Isaacs, 1938; Mills, Legare, Bills, & Mejias, 2010; Piaget, 1926). While this manifestation of everyday life information seeking is quite prevalent in the actions of young children (that is, children six years of age and younger), it has not yet been examined in detail from an information practices perspective.

LITERATURE REVIEW
Children’s Information Seeking
The importance of other people as sources of information has been established as one of the main principles of information seeking (Harris & Dewdney, 2004). Consistent with research on adult populations, prior research in the fields of information science (e.g. Agosto & Hughes-Hassell, 2005; Meyers, Fisher, & Marcoux, 2009; Shenton & Dixon, 2003) and developmental psychology (e.g. Fitneva, Lam, & Dunfield, 2013) has indicated that children (that is, individuals under the age of 18 years) frequently demonstrate a preference for asking other people for information. Younger children display a heavier reliance on other people as information sources than older children, often turning to their parents in order to meet their information needs (Shenton & Dixon, 2003). This could in part be due to both young children’s limited abilities to read and write, making use of sources such as books and online resources difficult, and their dependence on others to access other sources such as public libraries or museums.

Many studies of children’s everyday life information seeking have relied on self-report methods such as interviews, focus groups, and activity logs. These methods may not be suitable for use with young children such as preschoolers who have limited language abilities, with more naturalistic or observational approaches offering a more suitable alternative (McKechnie, 2000). Furthermore, such self-report methods may not be well suited for investigating information seeking in interpersonal contexts. Conversation analysis (CA), a qualitative research method concerned with examining the minute details of language use in social interaction (see Sidnell & Stivers, 2013 for a thorough review of CA), has been cited as one potential method of investigating information practices (Talja & McKenzie, 2007). The ways in which language use is organized through social interaction is of particular interest with this methodology. CA has been used to examine children’s information seeking in library settings (Solomon, 1997), as well as the questions children ask in classrooms (e.g. Mehan, 1979) and in the home (e.g. Bova & Arcidiacono, 2013). The detailed focus of CA on language and social interaction affords researchers the ability to directly...
examine the questions children ask, how these questions are brought about, and how they are responded to, without relying on retrospective accounts of such events from either the children or their family members.

Information Seeking in Action
The methods of CA are widely used in fields such as education, particularly in the second language classroom (e.g. Seedhouse, 2005; Waring, 2014) and preschool settings. For example, research has examined children’s production of social order in play situations (Butler, 2008), how very young children use nonverbal movements to tease each other (Lerner & Zimmerman, 2003), and how very young children place actions in sequentially appropriate transition spaces (Lerner, Zimmerman, & Kidwell, 2010). In general, these studies focus on describing the social world of children in institutional settings. Although many CA studies examine adults’ interactions in everyday environments such as the dinner table (e.g. Mandelbaum, 2010), fewer CA studies have been conducted with young children in everyday life situations, such as the family home.

CA researchers have examined questions in everyday interactions, focusing on topics such as question design (Heritage & Sorjonen, 1994; Koshik, 2003), negative interrogatives (Heritage, 2002), responses to w/answer questions (Fox & Thompson, 2010; Schegloff & Lerner, 2009), epistemics (Bolden & Robinson, 2011), transformative responses to questions (Stivers & Hayashi, 2010), and yes-no questions (Raymond, 2003), among others. However, most conversation analytic studies related to the study of information seeking have focused only on institutional talk between adults. These studies have found that in these settings, speakers do not follow the typical standards of everyday talk. For example, in doctor-patient interactions, there is an asymmetrical relationship between doctors and patients; the doctors primarily ask questions about the patients and patients give answers (Frankel, 1990). Robinson and Heritage (2006) found that when physicians asked more general opening questions compared to confirmatory questions, they received much longer responses from patients with more problem presentations. In adult second language tutoring sessions, instances of “known information” seeking have been examined in reversed polarity assertions, in which teachers ask questions with presumed epistemic stances and expect a certain answer from their students; for example, a teacher may ask a student “not right here, right?” expecting a “no” response (Koshik, 2002). These studies provide important information about the format of information seeking practices in institutional settings, but there is a clear gap in our knowledge of information seeking practices in everyday life. Pomerantz (1988) did examine the specific information seeking practice of incorporating a candidate answer into an asking, in which interactants “give the co- interactants models of the types of answers that would satisfy their purposes” (p. 366). The narrow focus of Pomerantz’s study provides detail about a specific type of response in information seeking contexts, but more research needs to be done regarding everyday life information seeking.

Research using conversation analysis to examine children’s information seeking is also sparse. Solomon (1997) recorded reference interactions in school and public libraries to examine the components of children’s information seeking, such as the vocabulary used, and the interactional gaps, overlaps, and repair that occurred. Solomon found that there was no specialized vocabulary used during the reference interactions, suggesting that the language of information seeking does not differ from everyday conversation. The age of the participants in this study is not clear, but based on the content of the conversations, the participants were older children or adolescents. In classroom settings Mehan (1979) discovered a three part conversational structure where the teacher allocates turns, initiating with a question directed to the class, which is very different from the two-part adjacency pair structure that dominates everyday talk (Sacks, Schegloff, & Jefferson, 1974). Other research has been conducted in non-institutional settings, such as Bova and Arcidiacono (2013), who examined the questions children between the ages of 3 and 7 years of age asked in the home, and found that the majority of children’s “why”-prefaced questions served explanatory rather than argumentative functions, but that both types involved children seeking information.

While children’s questions have been studied directly in the context of the classroom (e.g. Gross, 2006) and the library (e.g. Solomon, 1997), studies of children’s information seeking in everyday life contexts have typically relied on self-report measures. The purpose of this study is to directly examine young children’s information seeking practices in family interactions. Data on how children naturally communicate in everyday interactions is relatively rare, and this collection and analysis is key to understanding more about children’s information seeking practices in their everyday lives. Using the methods of CA to examine children’s everyday interactions allows for a narrow focus on when and where children engage in information seeking in relation to ongoing talk and action, thus providing opportunities for a close analysis of the interactional relevance of these specific instances of information seeking.

Theoretical Framework

Information Practices
The information practices framework has been established as an alternative to models of information behavior that focus on active, problem-focused information seeking (McKenzie, 2003), allowing for considerations of the social contexts in which interactions with information occur (Savolainen, 2007). In McKenzie’s (2003) model of information practices, four types of information seeking are identified: active seeking, active scanning, nondirected scanning, and obtaining information by proxy. Individuals
engaged in the information seeking process first connect and then interact with information sources, which can take a variety of forms, including print documents, electronic material, or people. Within the categories of information seeking, a number of specific information practices are identified, such as asking pre-planned questions, asking spontaneous questions, active listening, serendipitous information encounters, and receiving information from an intermediary. Of particular importance for this study are the specific practices of interacting with information sources by asking pre-planned and spontaneous questions in order to satisfy an information need. The ways in which children connect with the specific information sources, their family members, is beyond the scope of this study.

Under the information practices ‘umbrella’, the distinction between information seeking and communication is not well defined (Savolainen, 2007), lending this viewpoint well to discursive and conversation analytic approaches. While it has been argued that blurring the line between communication and information practices may lessen the “discriminatory power” of the information practices concept (Savolainen, 2008, p. 50), we contend that consideration of information seeking situated within conversation is necessary when examining the information practices of populations such as young children who may rely more heavily on interactional information seeking strategies due to their limited abilities to engage with text-based information sources.

Conversation Analysis
The intellectual roots of CA stem from many different fields, including sociology, ethnomethodology, ethnography and linguistics (Sidnell & Stivers, 2013). Simply put, the present research goals of CA are to “describe the organization of ordinary social activities” (Sidnell & Stivers, 2013, p. 33). In paying close attention to the ordinariness of social interaction, CA places emphasis on the mundane details of everyday talk, drawing on members’ meanings to form analyses. This study utilizes the method of CA to place emphasis on the talk of children when examining information seeking, because it is through talk that children seek to understand more about their world.

One of the key concepts in CA is sequence organization, or how “a course of action is implemented through talk” (Schegloff, 2007, p. 9). Much work in CA has focused on adjacency pairs, such as offers and acceptances, requests and deliveries, or, as is most relevant for this paper, questions and answers. In everyday conversations these adjacency pairs do not occur in isolation, and form part of larger courses of actions. Schegloff (1984) writes that “adjacency pairs are especially strong constraints, a first pair part making relevant a particular action, or a restricted set of actions, to be done next” (p. 37). Thus, when children ask a question they are creating an answer as a relevant next for their family member(s). Exploring how children’s questions come about in larger courses of action in conversations with family members will help us understand how their information seeking practices fit interactionally into a larger family discourse.

RESEARCH QUESTIONS
This paper reports on preliminary results from a broader research study examining young children’s information seeking within the context of naturally occurring communication between young children and the people from whom they are likely to ask for information, their family members. Specifically, this paper seeks to address the following questions:

1. How and when do children’s everyday information seeking practices arise in everyday conversations with family members? In what ways, if any, are they different from what we know about institutional information seeking sequences?

2. In what ways do the questions asked by children within everyday conversations with family members fit within McKenzie’s model of information seeking practices?

METHOD
Approval from our institutional review board was obtained before recruitment and data collection commenced.

Participants
Participants in this study are families with at least one child between the ages of 3 and 6 years who speak English in the home. In order to recruit participants, flyers were posted in local public libraries, university buildings, businesses, and daycare centers. Snowball sampling was also used. Preliminary data from ten girls ranging in age from 3 to 6 years (three 3 year olds, three 4 year olds, two 5 year olds, and two 6 year olds) is discussed in this paper. This focus on young girls was not intentional, but rather is a result of the composition of the families who have volunteered to participate in the study thus far. Recruitment of additional families is ongoing.

In all nine families, the girls’ mothers participated in the video-recordings; only six fathers participated. In two families, a younger sibling (in both cases, infants) was seen in the video-recordings, and in four families, one or more older siblings participated. In two of the families, the child in the target age group was an only child. In one family, both children were in the target age group.

Data Collection
Parents were asked to record three family interactions lasting approximately thirty minutes during which their children might typically engage in rich communication with family members. Parents were provided with small handheld video cameras and tripods, a tip sheet with suggestions for possible interactions that might be communication-rich, such as play times, bedtime routines, or meals, and a checklist of steps required for capturing quality recordings, including making sure the camera was...
turned on, all participants could be seen in the video, and that background noise was minimal. The video cameras typically remained stationary once recording commenced, however at times parents moved the cameras in order to continue recording as their children moved to different locations within their homes.

In total, 35 video-recordings were collected from nine families, with an average of 87 minutes of video from each family. A variety of family interactions were captured in the video-recordings, showing the girls and their families engaged in play (12 videos), eating meals (10 videos), making crafts (6 videos), reading stories (4 videos), completing school-related activities (3 videos), driving in the car (1 video), and preparing meals (1 video). Each family interaction included the child(ren) in the target age group in addition to at least one other family member. Informed consent was obtained from all child participants. Parental consent was obtained for all child participants six years of age and under, and assent was obtained from all child participants seven to eighteen years of age, in keeping with the expectations of our institutional review board.

Data Analysis
All video data were coded by the researchers for instances of the children in the target age range asking questions of the other family members in the video. We coded questions as utterances that required, but did not necessarily receive, a relevant answer; not just relying on the grammar of the utterance, but also on its intonation and sequential relevance (Schegloff, 2007). In a broader sense, we followed Stivers’ (2010) definition of questions: “questions are traditionally defined as sentence types that seek information from someone being treated as knowing by someone who is unknowing” (p. 2776). In the second phase of coding, these utterances were then coded as instances of information seeking or as serving other communicative functions (such as asking for permission or assistance). For example, if a child asked “can I have yogurt?”, this question was coded as a request for permission instead of information seeking, and was thus not included in the collection of questions analyzed for this paper. Information seeking was defined as an utterance spoken by a child in order to fulfill an information need, which could include “facts, interpretations, advice, opinions or other forms of messages carrying meaning” (Shenton & Dixon, 2003, p. 220). Next, the clearest cases of information seeking were transcribed, noting all verbal and nonverbal behavior of the interlocutors, using the Jefferson transcription system typical of CA research (Jefferson, 2004). Then, these segments were analyzed according to the methods of CA (Hepburn & Bolden, 2013), examining the actions of the interlocutors surrounding these sequences of information seeking to determine the interactional and sequential relevance of the girls’ questions.

PRELIMINARY FINDINGS
Four hundred instances of information seeking questions were identified in the video data. Young girls frequently engaged in information seeking in their conversations with family members. They asked questions of their parents and siblings about a variety of topics including word definitions, the physical properties of their surroundings, how processes occur, and why things happen. This paper will address examples of information seeking that are representative of the collection as a whole, and will explore characteristics of the girls’ information seeking and the sequential environments in which they occur that we found to be present throughout the collection.

Information Seeking Related to Ongoing Talk and Action
In nearly all of the instances of information seeking identified in our data, the questions asked by the children were in relation to talk or actions occurring in the family interaction.

For example, as can be seen in Extract 1, Libby1 (age 3) asks a question that is related to the ongoing conversation about space food. In this extract, Mom, Dad, Libby and her sister Abby (age 5) are finishing dinner. Prior to the beginning of this extract, the family had been discussing the contents of Libby and Abby’s yogurt pouches, which Mom has compared to space food and is now explaining that comparison (lines 01, 05, 07-10). After Dad agrees with Mom’s comparison of the yogurt pouches to space food with the confirmatory “mmhm” in line 13, Libby asks a content-relevant question in lines 14 to 16, inquiring how astronauts would physically go about eating their space food with their helmets on. Libby’s question relates back to Mom’s previous comparison of space food to the yogurt pouches, as she goes one step further and inquires about the practicalities/logistics of the astronauts eating the pouches. Furthermore, her question occurs in a sequentially appropriate position, after Dad has confirmed Mom’s assertion is an appropriate transition relevant place where the next utterance could be the first pair part of an adjacency pair, such as a question.

Extract 1. Family 1: Astronauts (CA Transcript)
01  MOM:  So space food,
02   (2.0) 7{ (Mom looks to Dad)}
03  MOM:  Right
04  DAD:  [\[   ]]
05  MOM:  [Is-is] a food in a pouch;
06      (0.2)
07  MOM:  >That doesn't need to be
08       refrigerated so this isn't
09  exactly sp<- but this whole
10 pouch concept,
11  (2.0)

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1 All names are pseudonyms.
This extract provides an example of how children’s questions may immediately relate back to prior talk, and thus are interactionally and sequentially relevant and appropriate. Both Mom and Dad respond to this question, with Dad positively assessing it as a “good question” in line 19 and then providing an explanation to answer the question in lines 21-23 which is confirmed by Mom’s “right” in line 24. Therefore, not only does Libby’s question come about as a result of prior talk, but it also becomes the focus of subsequent talk.

Not all information seeking occurs in such direct question-answer formats, however. Extract 2 shows a much longer instance in which many questions are asked in a relatively short time. Abby and Libby both engage in information seeking about the same subject, with questions asked in lines 09, 14-15, 16, 22, 44-45, and 54-57. This example shows how one question may snowball into a flurry of information-seeking in which children ask follow-up questions even as their initial questions are responded to. After Mom labels the yogurt as raspberry (line 06), Abby says “plum” with rising intonation, indicating that she is asking a question, providing another potential label for the fruit. Mom repeats Abby’s “plum” in line 10, perhaps asking for further clarification from Abby, and then chastises her in lines 12-13. Abby tries again with “it’s this?” (lines 14-15), pointing to a specific fruit on her yogurt, therefore requesting a label from Mom. Mom then labels the fruit as a “strawberry” (line 19) after examining the yogurt pouch (lines 17-18). Mom’s oh-prefaced utterance possibly indicates that Abby’s previous question was problematic and/or unclear (Heritage, 1998) and could be a reason why Abby’s first question attempt (line 09) was not thoroughly responded to. After inspecting her yogurt pouch once again, Abby then asks another question requesting confirmation of her mom’s previous labeling, saying “so this is (rotten) strawberry?” (line 22). As this analysis demonstrates, the initial questions concerning the type of fruit/yogurt on the pouch (lines 09, 14-15, 16, 22) are answered, and these answers lead to subsequent questions about the specific sugar beet pictured on the pouch (lines 44, 54-57). These subsequent questions are also placed in sequentially relevant positions, Libby’s “what is this?” in lines 44-45 occurs after Mom has sung a song about the beets (lines 40-42) and there is a short gap (line 43). Abby’s follow up question in line 54 occurs after Mom has finished directing Libby where to sit (lines 48-49, 52-53). After an initial question “what are sugar beets” in line 54, Mom does not immediately respond so Abby revises her question with a candidate understanding (Pomerantz, 1988). This leads to an extended family discussion about what sugar beets are.

Extract 2. Family 1: Sugar Beets (CA Transcript)

01 ABB: (((chewing yogurt)) Y:um
02 MOM: [It’s ra- (((looking at Libby))
03 ((((Libby stands up on chair)))(0.2)
05 DAD: >Will you< sit please Libby
06 MOM: It’s raspberry.
07 (1.0)/(Libby walks to behind Mom’s chair))
09 ABB: ((Looking at yogurt)) Plum?
10 MOM: Plum?
11 (.)
12 MOM: Oh don’t squirt it on me please
14 ABB: ((pointing to yogurt)) It’s this?=
16 LIB: =((Plum?)
17 (2.1)/(Mom leaning over to look at Abby’s yogurt))
19 MOM: Oh it’s strawberry.
20 (1.0)/(Abby looking at her yogurt))
22 ABB: S-this is (rotten) strawberry?
23 (2.0)/(Mom leaning to look at yogurt))
25 MOM: I can’t see it=
26 [looks like a strawberry to me
27 (((reaches hand out to Abby
28 MOM: Let me see
29 (0.7)/(Abby walks over to Mom))
31 ABB: It’s purple though
32 (0.9)/(Abby hands Mom yogurt))
34 MOM: It says strawberry beet berry.
35 (0.6)
36 MOM: Oh it’s a [sugar beet.
37 (((hands back yogurt to Abby)
38 (0.4)
40 MOM: ((singing)) beet beet sugar
41 beet beet sugar beet
42 sugar beet beet.
43 (0.2)
44 LIB: What is this? ((holding yogurt to Mom))
In these first two examples young girls’ information seeking comes about in direct relation to ongoing talk and action in their families’ interactions. How such information seeking occurs can take several forms. In the first extract, information seeking occurs as a result of ongoing talk, and Libby’s question is immediately and directly answered in subsequent talk. However, as we see in the second extract, instances of information seeking may not always be this simple. This extract exemplifies how information seeking does not always take the form of a straightforward question and answer sequence, as multiple family members may take part in asking and answering questions. For example, not only do both Abby and Libby ask questions about the fruit in their yogurt but both Mom and Dad work together to explain what sugar beets are (lines 36, 46, 59-60, 62, 64-65, 66-68, 70-71, 73, 76-82). The extended information-seeking occurrences in the second extract do not follow the typical question-answer format found in more traditional information-seeking contexts such as libraries and classrooms (Mehan, 1979; Solomon, 1997). Instead, the girls’ questions are answered throughout several turns of talk, leading to subsequent instances of information seeking. Additionally, it is pertinent to note that the girls’ placement of their information seeking questions are sequentially relevant; they do not occur in overlap with others’ talk, but are placed appropriately in transition relevant spaces within the context of the ongoing conversation.

Spontaneous Information Seeking

Only seven of the information seeking questions identified in the data were unrelated to the immediate surrounding talk and action of the family interactions captured in the video recordings. For example, in Extract 3 below, Britney (age 3) asks a question that brings up a new topic. Mom has just finished helping Britney put her food on her fork, and Britney responds with “thanks mom” in line 01. Then, Britney corrects Mom’s reference to her as “pumpkin”, referring back to a previous conversation about how she is a princess (lines 02-09). After chewing her food (lines 10-11), in line 12 Britney utters “Hm”, showing that she is thinking, and then continues chewing (line 13). Then, in line 14 she begins an utterance with the discourse marker “so” (Bolden, 2009), demonstrating that she is about to begin a sequence-initiating action; however, the rest of her turn is unclear. Mom displays a hearing/understanding problem in line 15, asking Britney “what’s that?”. Britney then asks the question “Why does Santa come down my chimney?”, however she is talking with her mouth full and is quite difficult to hear (lines 16-17). Mom orientates to this, telling her to chew first and then talk (lines 18-22). Then, in line 27, after Britney has finished chewing her food, she announces to Mom “I’m ready”. Mom gives her the go ahead to ask her question again (line 29) and Britney issues a full repeat of her previous question in line 32, again beginning with the discourse marker “so”. Mom then answers her question in the subsequent lines.

Extract 3. Family 6: Santa (CA Transcript)

01 BRI: Thanks mom
02 MOM: You’re welcome pumpkin
03 BRI: (1.0)
04 BRI: I’M A [PRINCESS]
05 MOM: [Oh::: ] you’re welcome princess (.)
06 BRI: sorry
07 BRI: Heh heh heh heh
09 MOM: I forg(h)ot.
10 (6.5)/(Britney chewing, sound of Mom running water)
12 BRI: Hm
13 (1.0)/(Britney chewing)
14 BRI: So ( )
15 MOM: What’s that?
16 BRI: ( ) Why does Santa come down my chimney [and ( )]
Britney’s question here is unrelated to the immediately previous talk, but her use of the discourse marker “so” in both iterations of her question demonstrates that she is aware that she is beginning a new topic with her question about Santa, perhaps referring back to a previous conversation or something that happened before the video camera was turned on. This demonstrates the interactional sophistication of these young girls; even at three years of age they are able to mark their information seeking as unrelated to the current actions or immediately preceding talk.

Summary of Preliminary Findings
The majority of the information seeking questions identified in this data set occurred in relation to ongoing talk and action within the family interaction. Only seven of the four hundred information seeking questions identified in this data set differed from this trend, in that no discernible connection could be made between the immediate local context of the family interaction and the questions asked by the young girls.

DISCUSSION
The focus of this paper is on active attempts at information seeking, the explicit questions asked by the young girls to their family members in an effort to satisfy their information needs. Family interactions appear to be ripe opportunities for information seeking. In this way, the girls in this study routinely took advantage of “opportune moment[s]” (Sutton, 2001, p. 413) to seek information from more knowledgeable others, asking questions about words or topics with which they were not familiar or that they did not understand.

In the majority of cases, the questions asked by the young girls were related to their family’s interactions. The conversations and activities that take place when young girls are with family members appear to make young girls’ gaps in knowledge explicit to them, prompting them to take action to address these gaps. Less frequently, young girls engage in information seeking that is unrelated to the content of their families’ interactions. In these instances, the girls appear to have identified family interactions as opportunities to ask these unrelated questions. For these young girls, ongoing talk and action in family interactions may be perceived as the “right” or “critical time” (Sutton, 2001, p. 415) to engage in information seeking.

It is clear that the girls in this study engage in information seeking in sequentially appropriate and relevant ways by asking questions in ways that advance the course of the local ongoing action. Mom’s explanation about space food in Extract 1 is expanded to include how astronauts physically go about eating their space food. Abby and Libby’s round of questions in Extract 2 all function to gather more information about the origin and characteristics of a specific item, the type of fruit in their yogurt. Finally, Britney’s questions about Santa in Extract 3 create a new course of action; she has just been chewing her food and uses a lapse in the conversation to initiate a discussion about Santa.

Our findings are consistent with previous research in children’s questions in the home, such as Bova and Arcidiacono’s (2013) research in that the girls frequently asked explanatory questions in seeking new information in family interactions. Our findings are also consistent with prior research in institutional settings, for example, Solomon’s (1997) conclusion that no specialized vocabulary was used in information seeking sequences in library reference interactions. However, as expected, we did not find a three part conversational structure of questions as discovered by Mehan (1979), but that these questions were asked in sequentially appropriate positions, much like the nonverbal actions of the very young children in Lerner, Zimmerman, and Kidwell (2010). In these ways, the girls’ information seeking in their family interactions were similar to, yet different from, previous research in institutional settings.

McKenzie (2003) has explicitly identified asking questions as an information seeking practice, with the distinction made between pre-planned questions, which fall under the mode of active seeking, and spontaneous questions, which fall under the mode of active scanning. The questions the girls asked in response to ongoing talk and action in their family interactions appear to be examples of spontaneous questions. Spontaneous questions are considered under the
mode of active scanning when such questions are asked in a location that could be considered as a “likely information ground” (McKenzie, 2003, p. 26; see Fisher & Naumer, 2006, for a full explanation of the theory of information grounds); in this sense, active scanning is distinguished from nondirected monitoring, a third mode of information seeking identified in McKenzie’s model. Non-directed monitoring also involves “serendipitous encounters” (McKenzie, 2003, p. 26) with information sources, but unlike active scanning, the individual need not have “a ‘to-do list’ of information needs in mind” (McKenzie, 2003, p. 29).

While the girls asked their questions in their family homes, which are likely sites of information provision, the extent to which the questions asked addressed information needs that may have been on the children’s internal ‘to-do list’ is unknown. Thus, while we contend that these questions are likely examples of active scanning, it is challenging to definitively categorize their actions since McKenzie’s model relies in part on consideration of individuals’ internal processes. Similarly, it is difficult to discern the degree to which the questions that were not related to the content of the families’ interactions were spontaneous or pre-planned. Had Britney been wondering about Santa’s actions for some time before taking advantage of the gap in conversation with her mother? Or did something external to the conversation, perhaps something in her environment such as a Christmas card or decoration, prompt her question? Because of the nature of the video data, it is not possible to answer these questions. Thus, we cannot know to what extent the girls in our data engaged in active seeking, active scanning, and nondirected monitoring as described by McKenzie (2003).

As CA allows us to focus on how children make sense and participate in the world around them, our aim has been to describe and explain children’s information seeking practices in context. As Lerner, Zimmerman, and Kidwell (2010) explain of their research with children, “…very young children are the subjects of our investigation, then, but our object of study is not their developing ‘mental life’ but their participation in the preexisting orderly life of the species” (p. 48). Although this study places importance on the children’s talk-in-interaction and not on their cognitive processes, making it difficult to determine which mode of information seeking the girls engaged in, it is clear that the girls consistently engaged in the asking of questions as an information practice.

These difficulties in ascertaining whether the girls’ questions were examples of active seeking, active scanning, or non-directed monitoring highlight a limitation of McKenzie’s (2003) model of information seeking practices. This model was developed based on a study of women’s descriptions of episodes of information seeking. Within these descriptions, the women made clear the ways in which their information seeking activities were intentionally and actively brought about or, alternatively, were more serendipitous in nature. Applying this model, which was built on retrospective accounts of participants’ activities, to recordings of conversations in which the participants’ intentions cannot be determined, has its challenges.

Yeoman (2010) has also noted challenges that may arise in applying McKenzie’s (2003) model of information seeking practices to other populations and contexts. This is not to say that McKenzie’s model is without merit; on the contrary, it is a powerful model that allows for a diversity of actions to be considered within the scope of information practices. However, as Yeoman (2010) notes, continued attempts to apply the model in a variety of contexts with a variety of populations will allow the ways in which the model may need to be refined or expanded to become apparent. Based on the findings of our study, we suggest further exploration and articulation of the ways in which specific actions (such as asking questions) may be differentiated into distinct modes of information seeking without reliance on an understanding of the information seeker’s internal processes. This is essential if McKenzie’s model is to be used in studies of information seeking practices as they occur in naturalistic settings, rather than limiting its use to studies that examine accounts of information seeking after such activities have taken place.

**Limitations**

The families in this study were asked to video record communication-rich interactions. Families were given suggestions about the types of interactions that might be most fruitful, but were free to choose those which worked best for them. Perhaps because of the guidelines given to parents, technology use in the data was very low. In three of the families, older siblings engaged with technology (iPads and video games) in some of the video recordings. In one of the families, the mother and daughter’s attention periodically turned to the television, which was on in the background. Only one of the children in the target age range could be seen directly utilizing technology (an iPad) in the video recordings. These family interactions that make up our data, then, may not be representative of the majority of family interactions, either within these families or across families more generally.

In addition, as previously noted participation in this study was limited to families in which all members speak English at home. Perhaps as a result of this, our current sample consists of Caucasian families.

**Future Research**

As is evident by the high number of information seeking instances identified in the video data, young girls frequently ask questions in attempts to meet their information needs. These attempts are not always successful, as family members do not always provide responses that offer answers to the girls’ questions. The girls continue to utilize this information seeking strategy of asking questions,
however, perhaps because of the limited options available to them to engage in other information seeking practices. We are continuing to work with this data set and have identified a number of research questions in addition to what has been addressed here. Future research will examine: the content of the girls’ information seeking questions; the contexts in which such information seeking arises; questions that remain unanswered within the family interactions; and the girls’ reactions to both satisfactory and unsatisfactory responses to their questions.

CONCLUSION
The findings of this study have important implications for understanding children’s information seeking. While studies of information seeking often focus on information seeking in relation to specific topics or subject areas, it may be more appropriate to focus on the various strategies employed by young children in seeking information across a range of areas and as related to surrounding talk, action, and their environments. As we have found more than four hundred instances of information seeking in our data, children’s everyday interactions with family members appear to be an appropriate and necessary direction for future research on children’s information seeking. Furthermore, utilizing CA when examining children’s interactions, especially when concerned with information seeking, will enable researchers to understand more about children’s participation in family life and how they utilize these interactions to posit information seeking questions. More data is needed to better understand the ways in which young children engage in information seeking within everyday family interactions.

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