Determining the approximate age that children are able to understand the purpose of advertising messages has been a concern of children and media researchers for over 40 years. However, other theorists have suggested that age is not the necessary determinant of persuasion understanding but that cognitive development is (via theory of mind). In addition, Kunkel (2010) has suggested that advertising knowledge represents a number of competencies. Working with elementary school children, this study tested whether children’s theory of mind (ToM) capabilities predicted advertising knowledge. Results indicate that children’s understanding of selling intent is significantly linked to ToM development beyond the influence of age and linguistic competence and that children showed stronger knowledge of selling intent than knowledge of persuasive intent.

Keywords: Persuasion Knowledge, Advertising, Cognitive Development, Children and Media, Social Cognition.

doi:10.1111/jcom.12155

In an age where advertising’s reach has extended into nearly all areas of our lives and the need to process persuasive appeals has become routine, it is important to realize that these messages are actually quite complex. How do we know when a spokesperson is presenting a biased view or using semantics to shade the truth? In fact, how do we even come to realize that we are being sold something? For children, understanding persuasion is a process that takes time, practice, and cognitive maturation.

As such, researchers in the area of children and advertising have been working for over four decades to determine exactly when children are able to understand that commercial messages are specifically designed to persuade audiences and encourage purchasing behaviors. Early work in this area suggested that the approximate age that children understand the intent of these messages was 8 years (see Kunkel et al., 2004).
However, a number of studies have called this assertion into question, as some scholars have suggested that children need to be quite a bit older to understand advertising (over 10 years of age; Oates, Blades, & Gunter, 2002) whereas others have suggested that children can understand advertising at a younger age (under 6 years of age; Donohue, Henke, & Donohue, 1980).

There are two possible reasons for this confusion in the literature. The first is that current insights from cognitive development have not been fully brought to bear on the subject when this area of research might actually hold the key (Moses & Baldwin, 2005). For example, although researchers in this area have framed persuasion understanding as a cognitive skill, they have used the age of the child as an imprecise proxy rather than searching for specific cognitive competencies that predict persuasion understanding. However, over the last several years, scholars have suggested that children's social-cognitive development may provide the key to uncovering when children understand persuasive communication (Moses & Baldwin, 2005) with initial evidence suggesting that children's theory of mind (ToM) predicts advertising understanding (McAlister & Cornwell, 2009). This study extends this area of inquiry by testing whether separate aspects of ToM better predict advertising understanding with children in early elementary school. Specifically, although this study does not test the full range of persuasion understanding as articulated by Roberts (1982), this study tests whether children's social-cognitive development predicts children's understanding of selling intent (i.e., commercials encourage purchasing behaviors) and persuasive intent (i.e., commercials encourage more favorable cognitions, attitudes, and/or beliefs toward the product).

To readers unfamiliar with ToM, it is the ability to impute mental states (e.g., intentions, desires, and knowledge) to oneself and others while also understanding that those around us have desires, attitudes, and intentions that are different from our own (Premack & Woodruff, 1978). Moreover, although the word “theory” is attached to the term, it is actually referencing the individual's ability to engage in “folk psychology” as these mental states are not directly observable and scholars must construct a generalizable model for how cognition works in others. As numerous studies have shown, people are not born with this ability. Rather, it is something that develops throughout childhood as young people's social-cognitive skills become more complex (Wellman & Liu, 2004).

The second potential reason for disagreement in the literature is that there is a general lack of consistency in what children and advertising researchers mean when they write about children's persuasion understanding (Kunkel, 2010). For example, if a child knows that a commercial is intended to motivate its viewers to purchase the product is it correct to say that the child has understanding of the message's persuasive intent? What if that same child does not know that the message is designed to influence their attitudinal assessment of the product, does the child have persuasion understanding then? As argued by Kunkel (2010), many of these issues stem from the fact that researchers have been conflating two separate ideas when they study children's advertising knowledge as some researchers have conceptualized persuasion
understanding as knowledge of *selling* intent (i.e., knowledge that the message intends to have viewers buy the product). However, this is very different from knowing that a message is designed to change our assessment of the product (either through changing our affective assessment or cognitions) through the presentation of potentially biased information (i.e., knowledge of persuasive intent). With this conceptual confusion at the heart of research in this area, this study tests whether children develop an understanding of advertising selling’s intent before they develop an understanding of advertising’s persuasive intent.

**Social-cognitive development and persuasion understanding**

Understanding the beliefs, desires, emotions, thoughts, perceptions, and intentions of others around us is a process that stretches into adolescence (Bosacki & Wilde Astington, 2001; Dumontheil, Apperly, & Blakemore, 2010). The study of children’s ToM is a research area that examines how children come to develop an awareness of other people’s mental lives and motivations. Initially, very young children (approximately under 3) have difficulty understanding that other people have different desires, beliefs, knowledge, and motivations from themselves (Perner & Lang, 1999). Yet, as children get older, they gradually begin to learn that other people have distinct mental states and will act in accordance with those mental states, with certain abilities developing earlier than others. For example, children appear to understand that other people have different desires before they understand that other people have different belief states although knowledge of belief states precedes children’s understanding of emotional states (Wellman & Liu, 2004).

As detailed in greater depth below, the development of children’s ToM provides a nice fit for describing how children come to understand persuasive messages. Specifically, as children’s ToM abilities mature these abilities should map nicely onto what children actually need to understand persuasive messages. Currently, there are only three scholarly works that have explored whether ToM development influences either persuasion understanding or brand knowledge. The first of which was an essay by Moses and Baldwin (2005) which offered insights into how ToM could affect children’s advertising knowledge but did not empirically test the relationship.

The second of these examinations was from McAlister and Cornwell (2009) and tested whether preschool children’s ToM development was linked to their persuasion knowledge for five print advertisements. They found that children who did better on their slate of ToM tasks were more likely to understand advertising appeals, even after controlling for age and linguistic competence. It is important to note, however, that the measure of persuasion understanding was quite limited. Specifically, because of the young age of the children studied (the mean age was approximately 4 years), the researchers only examined whether these children understood that advertisements were designed to encourage consumption of the product and did not differentiate between differing facets of these appeals (e.g., whether the advertisements were informative vs. persuasive).

The last of these investigations was also from McAlister and Cornwell (2010) and again focused on the consumer competency of preschool children. Although this
study did not explicitly test children's persuasion understanding, these researchers did examine whether children's ToM significantly predicted their brand awareness. The study found that children with more nuanced understandings of social cognition were indeed more likely to understand brand symbolism.

To date, there have been no empirical investigations that have explored the relationship between ToM development and a more nuanced understanding of advertising messages or marketing tactics, particularly children who are at the approximate age where they are thought to develop persuasion knowledge (e.g., Kunkel et al., 2004). The closest researchers who study children and advertising have gotten with investigating social cognition within this age range is testing how children's perspective taking ability predicts advertising understanding (Chernin, 2007; Faber, Perloff, & Hawkins, 1982). There is little doubt that these constructs are related; however, there are significant differences between ToM and perspective taking. Specifically, although perspective taking might be considered a subset of this cognitive ability, ToM encompasses other elements of cognition. For example, previous research on ToM has shown that its development is closely linked to understanding the rules associated with language use (Astington & Jenkins, 1999) along with determining communicator intent (Ziv, Solomon, & Frye, 2008).

**Persuasion knowledge and ToM**

Why should the research on ToM have any import for how children process advertising messages? At the heart of both these research programs is the attempt to uncover how children come to understand the ways that other people behave and how belief states influence behavior. In fact, understanding persuasion may represent an advanced development in the child's ToM. Specifically, in order for the child to recognize that he or she is a target of a persuasion attempt, the child must not only appreciate that other people have feelings and motivations which are separate from their own, but they must also come to realize that those doing the persuading are actively trying to change the child's own attitudes and belief states (Bartsch, Wade, & Estes, 2011).

Furthermore, when considering that children are most often required to successfully decode persuasive messages that do not actually “look” like overt persuasion attempts, the ability to discern masked intentions should be critical (i.e., children must develop some level of skepticism to understand and detect both cynicism and sarcasm). For example, content analyses of children's commercial messages have shown that many of the advertisements targeted to children use appeals that focus on fun and play associated with product use or use affectively pleasing marketing characters (Wicks, Warren, Fosu, & Wicks, 2009). Children must also contend with persuasive appeals that are “under the radar,” such as advergaming (i.e., games created by brands to appeal to customers or product placement). Last, there is evidence from other areas of child development which suggest that persuasion understanding is linked to ToM development as these areas conceptually overlap with understanding persuasion. Research in the areas of children's understanding of teaching (Davis-Unger & Carlson, 2008; Ziv et al., 2008), the creation of persuasive appeals (Bartsch & London,
2000; Bartsch, London, & Campbell, 2007; Bartsch et al., 2011) and both the understanding and practice of deception (Hala, Chandler, & Fritz, 1991; Sodian, Taylor, Harris, & Perner, 1991; Talwar & Lee, 2008) are all related to ToM development.

**Understanding cognitive states and persuasion development**

One of the most elementary things that children must realize if they are to understand persuasion is to understand that other people have different desires, beliefs, and motivations than they do. If we accept the most basic definition of persuasion, which is that persuasion deals with the intentional (in the case of commercial advertisements) changing of another person’s behaviors, beliefs, or attitudes (O’Keefe, 2002), then knowing that beliefs or desires vary from person to person should be essential to understanding persuasion.

In research on children’s ToM development, one of the first skills children acquire is the awareness that other people can have false beliefs (i.e., beliefs whose content contradicts reality; Wellman, Cross, & Watson, 2001). As numerous investigations have revealed, the ability to understand that other people have differing desires and beliefs develops rather early in most children, with the majority of children arriving at some understanding of false-belief knowledge between the ages of 3 and 5 (see Wellman et al., 2001, for a meta-analysis on the acquisition of false belief). Furthermore, as Wellman and Liu (2004) showed in their study on the acquisition of young children’s ToM, these skills appear to follow a consistent pattern in young children, with certain skills (e.g., knowledge of another person’s desires) developing before others (e.g., understanding that physical displays of emotion are not the same as felt emotions).

Knowing that other people have separate beliefs/desires and will therefore act according to those mental states should represent a milestone in understanding persuasion. For example, consider a child who does not understand the variability associated in others’ mental states and how they may receive a persuasive message. For this child, the very notion that someone else has a separate set of beliefs (e.g., the belief that cereal X is a good cereal) is beyond their understanding. Instead, the very statement “cereal X is a good cereal,” is a statement that describes reality. On the other hand, those children that have developed an understanding of other people’s minds should be able to recognize that such a statement is merely an expression of a belief state.

However important the child’s development regarding knowledge of others’ minds is, there is still more that the child needs to learn before they can understand the intent of persuasive messages. The abilities outlined above refer to only first-order beliefs (i.e., beliefs about someone else’s mental state) and not second-order beliefs (i.e., beliefs about someone else’s mental state regarding another person’s mental state), which have been shown to develop later than first-order beliefs (Perner & Wimmer, 1985).

The development of second-order belief understanding should help children with understanding persuasive messages; in fact, understanding second-order belief states
may likely represent the necessary and sufficient condition for understanding the selling intent of advertisements. Unlike children with only first-order understanding, the children with second-order understanding will be able to understand that persuasive messages will change another person’s belief, namely, their own. For instance, if we take the example given above about the cereal (cereal X is a good cereal), children with a less mature conceptualization of belief states will correctly see this statement as a statement about beliefs. Yet, they will most likely be unable to discern, unlike children with more mature conceptualizations of beliefs, that the statement is designed to act on another person’s set of beliefs (i.e., the message is designed to change their opinions/beliefs).

Understanding communicative intent and persuasion development

There is still, however, a further set of social-cognitive competencies that should help children understand persuasive messages. Although children with an understanding of cognitive states are able to see that beliefs/desires are embedded within other mental states, there is still the question of whether they understand that other people will present their beliefs in such a way as to hide their biases, blunt their preferences, or mask intentions. In other words, that people are active interpreters of information and not just copying the world around them (Lalonde & Chandler, 2002).

A clear difference in how children of varying ToM understanding approach these types of issues can be seen in how they interpret irony or sarcasm. Filippova and Astington (2008) looked at how children of differing ages reacted to stories where the antagonist in the story gave a sarcastic response to the protagonist (e.g., in a story where Robert misses a number of shots in a basketball game, his teammate Oliver says to him—“You sure are a GREAT scorer”). They found that children who could correctly interpret the meaning of Oliver’s statement were more likely to demonstrate advanced (i.e., interpretive) ToM.

This ability, to take into account someone’s biases when trying to understand their actions, is something that develops much later in children when compared with understanding mental states, as evidence shows that children are not fully able to understand an “interpretive” ToM until 7–8 years (i.e., second grade, Lalonde & Chandler, 2002) or even 9–10 years of age (i.e., fourth grade, Filippova & Astington, 2008). Yet, reaching this conceptual threshold should prove to be extremely beneficial for children as it relates to understanding persuasive messages, especially when considering the types of persuasive messages children are most likely to face when watching television. Although children who have knowledge of false beliefs will be able to see that someone delivering a persuasive message is intending to change their beliefs, it should only work if the persuasion attempt is clear. However, as noted above, the typical commercial messages that children are most likely to encounter mask their intent (Buijzen & Valkenburg, 2002; Page & Brewster, 2007). Consequently, children who have an advanced understanding of mental states and how they predict others’ behavior should be able to interpret these messages.
Implications for understanding of persuasion

Children’s ToM competency can be reconsidered in a way that can help us to uncover how social cognition influences communication understanding. Specifically, tests investigating ToM development in this study can be placed into two distinct categories: examinations of the individual’s knowledge regarding others’ cognition (Perner & Wimmer, 1985; Wellman et al., 2001) and examinations of the individual’s knowledge of communicative intent (Filippova & Astington, 2008). For example, the test of false belief knowledge is a test of whether a person is simply aware of another person’s knowledge state, whereas the test of interpretative ToM requires that a person be able to “unmask” an individual’s communicative intent.

What is interesting about this difference is that knowledge of persuasive and selling intent is essentially about “unmasking” advertising messages to see their true intent. Knowledge of persuasive and selling intent is about seeing these messages for what they are and would ostensibly require some measure of affective sophistication to parse them. On the other hand, knowledge of another person’s beliefs/thoughts would likely not require any additional affective sophistication; instead, it demands a certain measure of cognitive sophistication, which primarily relies on awareness of knowledge states. With this in mind, in addition to testing whether ToM predicts advertising understanding, this study also tests whether advertising understanding is linked more strongly with cognitive abilities (via tests of false beliefs) or with being able to unmask communicator intent (via tests of affective communication). The following hypotheses and research questions are proposed:

H1a: Children’s increased performance on the ToM tasks will be positively associated with their knowledge of selling intent, after controlling for age and language fluency

H1b: Children’s increased performance on the ToM tasks will be positively associated with their knowledge of persuasive intent, after controlling for age and language fluency and

RQ1: Which of the ToM tasks will be the strongest predictors for children’s knowledge of selling and persuasive intent?

Selling Intent versus Persuasive Intent

As noted above, it is important to keep in mind that measuring persuasion understanding has been historically fraught with issues (Kunkel, 2010). Most importantly, there is a differentiation between knowledge of selling intent and knowledge of persuasive intent (Rozendaal, Buijzen, & Valkenburg, 2009). Knowledge of selling intent entails whether the child is aware that marketing messages are designed to encourage consumption behavior, whereas knowledge of persuasive intent entails whether the individual is aware that marketing messages are designed to change opinions or attitudes about the product. In fact, as Kunkel notes (2010), much of the confusion in the literature regarding children’s persuasion knowledge and when it is actually achieved is likely due to conflating uniquely different constructs.
Initial research on these two aspects of consumer knowledge has shown that knowledge of persuasive intent develops later than knowledge of selling intent (Owen, Auty, Lewis, & Berridge, 2007; Rozendaal, Buijzen, & Valkenburg, 2008). In Rozendaal's study, they found that children developed understanding of selling intent at approximately age 8, whereas children over the age of 10 were the only ones to demonstrate knowledge of persuasive intent. With these past findings in mind, this study contends that children develop knowledge of persuasive intent significantly later than knowledge of selling intent:

H2: Children’s knowledge of selling intent will be significantly greater than their knowledge of persuasive intent.

Methods

Participants

The target population for this study was children between 6 and 9 years of age (72–119 months—M = 7.7 years, SD = 0.88). This age range was chosen because previous research and theorizing has suggested that the ages of 7–8 represent a critical juncture in children’s understanding of persuasive communication (Kunkel et al., 2004). Consequently, the goal was to test children who were just entering this crucial age range to those who had just left this range.

The study was conducted in camps and afterschool centers in the suburbs of a large city in the northeastern United States. Seventy-nine children participated in this study while a parent filled out a questionnaire regarding child/family demographics. Of the sample, there were slightly more girls (N = 40, 50.6%) than boys (N = 39, 49.4%). Of those responding to the question of child race (n = 77 parents), 81.8% of the children were identified as White (n = 63) followed by 11.7% of the children identified as multiracial (n = 9), with the remaining children identified as either African American (n = 2) or East Asian/Asian (n = 3). In addition, parents were asked if their participating child had any disabilities, with one parent indicating that their child had high-functioning autism. An analysis of the data with this child removed from the sample did not change results. As such, this child was included in the analyses presented here.

Procedures

This study was part of a larger study exploring children’s cognitive development and consumer behavior and received approval from the Institutional Review Board at the University of Pennsylvania. The original study included an experiment conducted with children along with a survey with parents. All tests reported here were conducted prior to children’s exposure to the experimental manipulation.

Children met with research staff twice during the study. In the first data collection session, children’s persuasion knowledge was assessed while their ToM development was assessed in the second session. The second data collection session was required to occur at least 14 days after pretest (Median = 17 days after pretest, M = 18.0 days,
SD = 6.1) to ensure that measurements conducted in the first session did not influence measurements conducted in the second.

**Independent variables**

*Theory of mind*

A battery of four measures was administered to determine the child’s level of social-cognitive and mental state understanding. For all of these scenarios, children were presented with puppets that “acted” out the scenarios along with laminated pictures to help the child understand the task. Following procedures were used in the cognitive development research (e.g., Filippova & Astington, 2008; Wellman & Liu, 2004), each of the tasks were scored dichotomously with scores based on the procedures laid out in the studies cited.

*First-order false belief*

The measure used in this study was originally created by Wellman and Liu (2004). The task was designed to test whether the child had a simple understanding of first-order false belief (i.e., that other people have thoughts different from their own). This particular measure presented a situation to children where two puppets were sharing a chocolate bar and both of them put it in a cabinet to save the chocolate bar for later. After one puppet leaves, the other puppet takes the bar from the cabinet and put it in the refrigerator. When the puppet that was not privy to the move re-enters, the child was asked where this character would look for the chocolate bar and where the chocolate bar really is. Children were considered to have attained first-order false belief understanding if they replied that the character will look in the cabinet and that the bar is really in the refrigerator (75% of children got this correct).

*Second-order false belief*

This measure was adapted from Perner and Wimmer (1985). Although the first-order false belief tests whether children can consider someone else’s mental representations, this measure tests the child’s development of ToM by asking children to think about someone else’s thoughts about another person’s thoughts.

Children were shown two puppets (Bobby and Sally) and were told that the puppets both wanted to buy some ice cream from a truck that was stationed at a playground. One puppet (Sally) needs to go home to get money from her mother and tells the other puppet (Bobby) that she will meet him at the playground to get ice cream. However, when Sally gets home, her mother tells her that the ice cream truck is actually at the beach. In addition, Bobby finds out that the ice cream truck is also at the beach, and then heads to the beach to get his ice cream. Children are further told that Sally does not know that Bobby knows where the ice cream truck is. Children are then asked where Sally believes the ice cream truck is, where Bobby thinks the ice cream truck is, and where Sally believes that Bobby thinks the ice cream truck is. Children who answered all three questions correctly were judged to have successfully completed the task (28% of children correctly completed this task).
Real-apparent emotion

This ToM measure was adapted from previous work by Wellman and Liu (2004). The task was designed to test whether the child understood that the words and facial affect someone uses does not always match up with the emotion that the person is feeling (i.e., the person says that they feel happy and are smiling but actually feels sad). Children were first presented with an answer sheet showing three cartoon faces that got progressively more positive in affect (sad, okay, and happy). Children were then told what each face meant (i.e., “this face means happy”) and were then asked to indicate which face they would point to if they felt happy, sad, or okay.

In the scenario, children were introduced to a puppet (Matt), whose face is never shown to the child. The assessor tells the child that the puppet had been picked on by other puppets and feels sad about it. However, rather than showing that being picked on has hurt his feelings, the puppet puts on a “happy” face. Children were first asked questions about some specifics regarding the scenario. Specifically, children were asked what the other puppets did when the target puppet was getting picked on, and what these other puppets would do if they found out how the target felt. Children were then asked the target questions: First they were asked “How did Matt really feel when the other children were picking on him” and were asked to respond by pointing to the appropriate face. Then, children were asked “How did Matt try to look on his face when the other children were picking on him” by pointing to one of the faces. Children who indicated that the puppet felt worse on the inside than what he showed on his face were considered to have successfully completed this task (87% completed this task correctly).

Interpretive ToM

The last measure on ToM tests whether the child understands subtle elements of communication. Specifically, it tests whether children understand that what someone says is not necessarily what they meant. In the version used for this study (adapted from Filippova & Astington, 2008), children were shown two puppets (Bobby and Matt) and a picture of a basketball court. The children were told that Matt is a new member of this school’s basketball team and is very excited about being on the team. They were further told that his best friend Bobby is also on the team.

In the scenario, children were told that during Matt’s first game, he had several easy shots, but missed them all. After the game, Bobby said to Matt; “You sure are a great scorer.” Children were then asked two questions to assess their memory of the scenario: “Did Matt help his team to win the game?” and “What did Bobby say to Matt?” They are then asked the target questions; the first target question was “Does Bobby mean that?” and the second question was “What does Bobby mean?” and finally “Does Bobby think Matt is a great scorer?” Children who correctly identified that the meaning of the statement was opposite from the literal interpretation were judged to have successfully completed the task (35% of children completed this task successfully).
Cognitive versus communicative ToM
An additional measure was created based on children’s separate responses to the cognitively based ToM tasks and the communicative ToM tasks as these tasks appeared to capture two separate aspects of social-cognitive understanding that could differentially influence persuasion and selling understanding. The two false beliefs tasks do not require that children be able to unmask what someone is saying compared with what they actually mean, whereas the real-apparent task and interpretive ToM task both require children to be able to discern what someone is “really” saying. Performance on the two false belief measures (first-order false belief, second-order false belief) was combined for use as a measure of cognitive ToM ($M = 1.03$, $SD = 0.64$), whereas the results from two other ToM tasks (real apparent, interpretive ToM) were combined as a measure of communicative ToM ($M = 1.23$, $SD = 0.60$).

Dependent variables
Advertising knowledge
The measure for advertising knowledge was adapted from two previous measures (Chernin, 2007; Rozendaal et al., 2009). The goal of this measure was to determine what children understood about advertisements, whether they understood their selling intent (i.e., commercials try to get you to buy things) and their persuasive intent (i.e., commercials try to get you to like the product; see Kunkel, 2010). The measure employed two differing methodologies to determine children’s advertising knowledge.

First, from Chernin’s measure (2007), children were asked open-ended questions about commercials without the benefit of viewing advertisements. Specifically, children were asked the following three questions (in order): “What is a commercial?” “Why are commercials shown on television?” and “What do commercials try to do?” Furthermore, using the procedures outlined by Chernin (2007), responses to these open-ended questions were recorded by the assessors and then later coded to determine whether the child understood the purpose behind advertisements.

Children’s responses to this series of three questions were analyzed to establish the presence (or absence) of knowledge of persuasive/selling intent and the child’s ability to articulate his or her comprehension of each concept. The responses to the open-ended questions were coded to determine if the child had correctly responded to the questions. Knowledge of persuasive intent was defined as knowledge that commercials try to convince people to like the things that are being advertised (Chernin, 2007). Specifically, if child responses acknowledged any of the following in their response, they were judged to have had knowledge of persuasive intent for that specific question: that the commercial is designed to have the viewer like the product (e.g., “they are trying to get you to like the product”), that the commercial presents positively biased information about the product (e.g., “they just tell you the best stuff about it and not the bad stuff”), and/or that the commercial is designed to make you “want” something (e.g., “they make you want to eat the cereal”).

However, contrary to the procedure used by Chernin, this study also employed the methodology used by Rozendaal et al. (2009). Specifically, as argued by Kunkel (2010),
knowing that an advertisement is designed to encourage you to want to purchase the product is distinctly separate from knowing that an advertisement is designed to make you like the product, with the former theorized to occur before the latter. As such, children’s responses were analyzed for children’s knowledge of persuasive intent and knowledge of selling intent.

Knowledge of selling intent was defined as knowledge of the fact that commercials try to encourage people to buy the things being advertised (e.g., “Commercial tell you to go out and buy what they are showing”). However, rather than using individually coded responses as separate indicators for reliability, the total scores for both knowledge of selling intent and knowledge of persuasive intent on the open-ended items were used to assess reliability. Two trained coders jointly scored 19% \( (n = 15) \) of responses for both measures and were able to attain reliability for both knowledge of persuasive intent \( (\kappa = .86) \) and knowledge of selling intent \( (\kappa = .91) \).

The second part of this measure also followed the procedure established by both Chernin (2007) and Rozendaal et al. (2009), as children were shown three commercials and were asked about each message’s intent. Children were seated at the computer with the assessor, while the assessor explained that the child was going to watch some commercials and that the assessor just wanted to know what the child thought about them. Great care was taken to select advertisements that matched the types of messages that children were most likely to see during children’s programming and appealed to a wide audience. The three advertisements shown to children were a 30-second advertisement for Paper Jamz (a computerized pad that children can play as a drum), a 30-second advertisement for Honey Nut Cheerios (a sugary cereal), and a 30-second advertisement for Hex Bug Ants (a small robot which mimics a bug).

After viewing each of these commercials, children were asked two questions, one to assess their understanding of selling intent and the other to assess their understanding of persuasive intent. The selling intent question was “Does this commercial want people to buy product name?” The persuasive intent question was “Does this commercial want people to like product name?” For scoring this measure, only answers that were unambiguously in the affirmative were scored as correct. For example, if the child said “maybe” or “kind of,” they were recorded as incorrect while “yes” or “they definitely want me to buy it” were recorded as correct.

Children's performance on the open-ended questions was then combined with their responses to the closed-ended questions to create an index of advertising knowledge with one score for knowledge of persuasive intent and another for knowledge of selling intent. For example, children who correctly answered each question for knowledge of selling intent received a score of six (knowledge of persuasive intent: \( M = 2.86, SD = 0.97 \); knowledge of selling intent: \( M = 3.38, SD = 1.17 \)).

**Covariate**

*Test of verbal ability*

Because children’s ability to understand persuasion has previously been linked to their verbal abilities (Chernin, 2007), a measure of children’s vocabulary was
included in the study. Children's verbal ability was tested with one of the subtests from the Woodcock-Muñoz Language Survey–Revised (WMLS-R; Woodcock, Munoz-Sandoval, Ruef, & Alvarado, 2001). The specific subtest used was the Picture Vocabulary Test. Children were presented with a page of pictures and were asked to provide the word that matched the picture. Children were given a score of 0 for incorrect identification and a score of 1 for correct identification, with results summed to create a total score (\(M = 34.80, SD = 3.68\)).

**Analysis strategy**

To test the first hypothesis (1A and 1B), ordinary least square (OLS) regression models were used. For both of these tests, child age and linguistic competence served as control variables. To test the second hypothesis, paired sample t-tests were used. For all hypotheses tests and research questions, significance levels at \(p < .05\) were considered significant. All analyses were conducted with SPSS 15.0 (SPSS, 2006).

**Results**

Hypothesis 1a predicted that children's increased performance on the ToM would be positively associated with knowledge of selling intent, controlling for age and language fluency. This hypothesis was supported as the model was significant, \(F(4, 74) = 3.64, p < .01\), although only the cognitive ToM tasks were a significant predictor of children's knowledge of selling intent (see Table 1). Specifically, children who successfully completed the first- and second-order false belief tasks (i.e., knowledge about somebody else's knowledge about somebody else) were significantly more likely to score higher on the measure of selling intent (\(\beta = .25, p < .05\)) even after controlling for both child age and linguistic ability (measure of communicative ToM: \(\beta = -.10, p = .40\)). Interestingly, neither age (\(\beta = .15, p = .27\)) nor linguistic competence (\(\beta = .17, p = .21\)) was a significant predictor of knowledge of selling intent when performance on the ToM tasks were included in the model.

Contrary to expectations, the test for children's ToM and knowledge of persuasive intent was not significant. Neither the communicative (\(\beta = -.11, p = .40\)) nor cognitive (\(\beta = .02, p = .87\)) ToM tasks were linked to knowledge of persuasive intent, \(F(4, 74) = 0.97, p = .43\). Moreover, neither age nor linguistic competence was a significant predictor for children's persuasion knowledge.

Research question one asked which types of ToM tasks were the best predictors for children's advertising-based knowledge. The results indicate that of the two types of tests, the only type that was a significant predictor for any display of advertising knowledge was the cognitively based ToM tasks and this only held for knowledge of selling intent and not for knowledge of persuasive intent. When looking at the results for the other set of ToM tasks, they did not even trend toward significance in these tests.

The last hypothesis relating to children's understanding of advertiser intent posited that children's knowledge of selling intent would precede children's knowledge of selling intent. The results indicate that although knowledge of selling and
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M. A. Lapierre

Table 1  Multiple Regression Predicting Knowledge of Selling Intent by ToM

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Notes: ToM = theory of mind.

persuasive intent was significantly correlated, \( r(79) = .38, p < .001 \), children's scores on knowledge of selling intent (\( M = 3.39, \ SD = 1.17 \)) were consistently higher, \( t(78) = 3.89, p < .001 \), than their scores on knowledge of persuasive intent (\( M = 2.86, \ SD = 0.97 \)).

Discussion

This study found that although ToM development did not predict children's knowledge of persuasive intent (H1b), it did predict children's understanding of advertiser's selling intent (H1a). Specifically, the better children performed on measures of ToM the more likely they were to know that commercial messages are designed to encourage the audience to purchase consumer goods (or encourage them to ask their parents). In addition, this link between ToM and knowledge of selling intent held even when accounting for child age and linguistic ability. This finding supports the theorizing of Moses and Baldwin (2005) as they predicted that children's ToM was a key element of understanding of commercial communication above and beyond other proposed determinants of persuasion understanding.

What is interesting about the relationship between ToM development and knowledge of selling intent is that the relationship only held for those ToM tasks that were more cognitive in nature, rather than communicative. These cognitive tests for ToM explored whether children were able to consider the knowledge states of other people, whereas the communicative tests looked at whether children were able to discern the actual intent of a message rather than the literal interpretation of the message. What makes this finding so interesting is that it should likely have worked in the opposite direction. Understanding that a message is designed to sell you a product would rightfully appear analogous to understanding that someone is feigning bravery or expressing sarcasm as they each get at deconstructing the intended purpose of the message. Yet, this study found that it was children's ability to understand knowledge states that was the primary predictive force for increased understanding of selling intent.

As such, the results from this study suggest that understanding selling intent may have more to do with general cognitive sophistication rather than communicative sophistication in children. This finding actually matches previous research on ToM capabilities and social competency. For example, previous research with preschool
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children has shown that children who perform better on measures of false belief understanding were significantly more likely to understand social complexities even after controlling for language abilities and age (Astington & Jenkins, 1995). With this in mind, rather than being able to disentangle communicative appearance from communicative reality, perhaps the skill children need most in their consumer understanding “toolkit” is the ability to understand that other people have differing cognitive states than they do.

With the findings related to ToM and understanding of selling intent working as predicted, it is interesting that children’s ToM was not similarly linked to their subsequent understanding of persuasive intent. In trying to understand why this divergence in results was found, it may be due to differences in complexity between the two constructs with the possibility that knowledge of persuasive intent develops when children are much older (see Kunkel, 2010). In this study, knowledge of persuasive intent was defined as knowledge that commercials were designed to get viewers to like the product, whereas knowledge of selling intent was defined as knowledge that commercials were designed to get people to buy the product. In looking at the conceptual differences between the two consumer competencies, it certainly appears that knowledge of selling intent would be a simpler concept to understand when compared with knowledge of persuasive intent. Knowing that commercials just want viewers to buy the things they are selling requires the ability to understand that someone else has separate yet definitive communicative intentions whereas knowing that commercials are designed to engender favorable thoughts would likely require the knowledge that others want to change your mental states.

The notion that these skills differ in complexity has been suggested by other scholars. As Kunkel (2010) has noted, it is likely that knowledge of selling intent is the first stage in a multistage process of consumer understanding for children whereas knowledge of persuasive intent is likely to come later in a child’s development. His review of studies assessing knowledge of selling intent and persuasive intent has indeed found that these competencies do not arrive at equal times. This was precisely what was found in this study and supports previous work (Owen et al., 2007; Rozendaal et al., 2008), as seen in the results for RQ1, which tested whether there were any differences between children’s knowledge of selling intent and knowledge of persuasive intent, children scored significantly higher on the measure of selling intent than they did on the measure of persuasive intent.

In fact, when looking at the collected evidence, Kunkel (2010) concludes that children likely need to be much older (ages 12–14) before they are consistently able to understand the true intent of persuasive messages. With this in mind, the lack of findings in this study linking ToM to knowledge of persuasive intent are possibly due to two issues. The first of these issues is that the children in this study were too young to consistently and reliably capture more complex understandings of consumer messages. The second of these issues is that the ToM tasks were not complex enough to capture the more nuanced cognitive competencies required to fully understand knowledge of persuasive intent. Future research that explores the role that ToM
competencies play in predicting consumer understanding should look at incorporating older children as well as ToM measures that are significantly more complex.

**Age and linguistic competence as predictors of selling and persuasion knowledge**

One of the most interesting results is the lack of influence age and linguistic competence played in predicting knowledge of selling and persuasive intent. As noted previously, much of the earlier theorizing on knowledge of advertiser intent used age as the likely determinant for when children were capable of understanding these messages (see Kunkel et al., 2004). However, later research by Chernin (2007) suggested that it was not age that was the primary driver of consumer understanding but rather it was general linguistic ability that predicted understanding, as she proposed that persuasion/selling knowledge is primarily a test of how verbally sophisticated children are as children who perform better on these measures are just more articulate than children who do not. Her findings did indeed show that linguistic competence was a significant predictor of persuasion understanding and this relationship held when controlling for the age of the child.

Yet, in the tests conducted for this study, neither of these variables explained a significant amount of variance after the inclusion of the ToM variables into the respective models. Instead, the results from this study suggest that past research on age and linguistic competence and their potential influence on children's understanding of commercial messages were looking in the wrong direction. It is not age that predicts consumer understanding, but age, as a reliable predictor of cognitive development, works through ToM, which then predicts consumer understanding. In addition, contrary to what Chernin proposed, the findings here suggest it is not the child's ability to competently communicate that leads to consumer understanding but is likely explained by the link between cognitive ability and language skill. However, more research is needed to further unpack how each of these variables interact as none of the variables investigated here predicted knowledge of persuasive intent.

**Implications**

In regard to the practical implications associated with the observed links between cognitive development and consumer knowledge, the results of this study offer some important insights regarding the potential efficacy of interventions designed to bolster children's advertising defenses. A number of children and advertising scholars have suggested that teaching children about the intended purpose of advertising can help them defend against commercial messages thus lessening their influence on young audiences (e.g., Eagle, 2007), whereas others have pointed out that these interventions rarely have their intended effect (Livingstone & Helsper, 2006). The results of this study call into question whether these types of interventions are likely to succeed. Specifically, what appears to prevent children from understanding the purpose of persuasive messages is largely dependent on their own cognitive maturation and has less to do with a factual understanding of advertising messages. Children with less developed ToM are unable to make the necessary cognitive representations to adequately
consider what a commercial message is trying to do. As such, it may not be a fair fight when pitting young audiences against sophisticated marketing appeals as children do not understand the stated purpose of these messages.

One way to help children contend with these commercial messages and the subsequent consumer behavior that follows from exposure would be to limit the number of messages that children see. The most recent estimates of children's exposure to television commercials indicate that the average American child sees tens of thousands of advertisements in the course of a year (Desrochers & Holt, 2007). For example, a number of similar industrialized Western nations limit the ability of marketers to reach children (e.g., the United Kingdom, Denmark), whereas other countries forbid the practice of advertising to children entirely (e.g., Sweden, Norway; Mallalieu, Palan, & Lacznia, 2005). However, it is unlikely that policy makers in the United States would take such steps as previous attempts to limit the advertising industry's ability to sell to children have been met with limited success (Kunkel et al., 2004). Other strategies to limit children's exposure to advertising could center on changing viewing patterns in the home by encouraging both children and parents to reduce screen time. Previous attempts to limit viewing time in children have been successful and have even been shown to positively affect child health outcomes (Epstein et al., 2008; Robinson, 1999). However, attempts to change child-viewing behaviors in the long term are likely to be quite complicated and are not guaranteed to succeed (Jordan, Hersey, McDivitt, & Heitzler, 2006).

Limitations
There are three limitations associated with this study that should be addressed. First, due to the cross-sectional nature of these data, it is not appropriate to draw causal inferences based on these results. A stronger test would be to follow children longitudinally to determine the precise interaction between development and persuasion understanding. Second, a more exhaustive set of ToM measures would have been preferable to test these relationships. However, due to time limitations, only four ToM assessments were used.

Finally, whereas this study provides some valuable insights regarding the distinction between knowledge of selling and persuasive intent, more work must be done to explore children's conceptual understanding of persuasive messages (e.g., Roberts, 1982). Specifically, the measure of persuasive and selling intent was potentially problematic as historically this has been a troublesome area in the field of children and advertising. This study included two separate methodologies to try and capture children's persuasion and selling knowledge and may not have thoroughly captured children's knowledge of advertising (Chernin, 2007; Rozendaal et al., 2009). As Kunkel notes (2010), researchers in the field of children and advertising need to have better measures of persuasion and selling understanding.

Conclusion
As described above, the findings of this study suggest that understanding children's ToM development is crucial in understanding children's persuasion knowledge, even
above the influence of child age and linguistic competence. Given that this study is one of the few investigations of children’s social-cognitive development and persuasion, more research is needed to fully understand how ToM and persuasion understanding interact. Still, these findings provide an important starting place in helping to refine our theorizing on children and persuasion understanding and sheds light on ways that parents, researchers, and policy advocates can help children negotiate the consumer landscape.

Acknowledgments

This research was conducted while the author was a doctoral student at the University of Pennsylvania. The author would like to acknowledge the following people for their help with this project: Dr Joseph Cappella, Dr Doug Frye, Dr Robert Hornik, Dr Deborah Linebarger, Dr Paul Messaris, Katie McMenamin, and Jim McPartlin.

References


