Abstract and Belief-Based Language Differentiate Joking, Pretending, and Literal Toddler-Directed Speech

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Abstract

Twenty-two parents read a book containing joking, pretense, and literal pages to their 15- to 21-month-old toddlers. Parents differentiated joking from pretense book pages by using (1) more disbelief statements and humor-specific words, (2) fewer belief statements, and pretense-specific words. Parents differentiated joking from literal book pages by using more (1) high-level abstract language, (2) disbelief statements, and (3) humor-specific words. This study extends findings that abstract language cues non-literal concepts in general (e.g., metaphor, irony). This is also the first study to discover differences in cues to joking and pretense.

Keywords: Humor, Pretense, Abstract language, Beliefs, Parent-child interaction

Introduction

Human life is permeated with social institutions with conventional and normative structures. In order to participate in collective activities, children must learn how to act within these settings. One interesting question is how children respond to violations of normative rules. Sometimes, the appropriate response may be to protest (e.g., Rakoczy, Warneken, & Tomasello, 2008), but sometimes the appropriate response may be to treat the violation as a joke (and laugh), or as pretend (and maybe join in). This involves not only understanding that people have intentions, but also that they have intentions to do the wrong thing. This is an important, yet difficult concept required to understand humor, pretense, lying, false belief, and metaphor (Hoicka, Jutsum, & Gattis, 2008, Leekam, 1991).

While some accounts suggest that children possess an innate capacity to understand others' pretense and false beliefs (e.g. Leslie, 1987), such accounts do not explain how children might distinguish when someone is pretending versus joking, or even doing the right thing. For example, how do we use a telephone? We could speak into it when someone is on the other end (literal). We could speak into it when no one is listening (pretending). We could put the receiver on our foot and speak (joking). To an adult, the act in and of itself may distinguish whether a person intends to joke, pretend, or be literal. However for a toddler still learning about new objects, it may not be clear which act follows which intention. If they have had little experience with telephones, any act could be seen as the literal act. Even with experience of telephones, the pretend act could be seen as a joke (it's silly to talk to no one) and the

humorous act could be seen as pretending (she's pretending that her foot is her ear). In order for toddlers to distinguish amongst various types of communicative intentions, it is thus plausible that parents give additional cues in order to help them in this task.

The goal of the current study was to determine whether parents differentiate joking, pretense, and literal speech with linguistic cues. Parents use more abstract language when reading humorous versus non-humorous book pages (Hoicka, et al., 2008). Similarly children use past and future tenses when pretending (e.g. Lodge, 1979; Musatti, 1993; Sawyer, 1997). Since references to past and future are forms of abstract language (Hoicka, et al., 2008), parents might also use abstract language to cue pretending. When irony and metaphor, two other concepts involving intentional wrongness, are couched in abstract language, adults are more likely to judge them as ironic or metaphorical respectively (Hoicka, 2010; Torreano, Cacciari, & Glucksberg, 2005). Theoretically, infants and toddlers could use abstract language in the same way to determine that joking or pretense was intended.

Belief-based language may serve to highlight differences between joking and pretense. When parents read a humorous versus non-humorous book, they used more disbelief statements, i.e., statements that conveyed that they did not believe what they had said (Hoicka, et al., 2008). For example, when making the joke, "Ducks say moo", parents made statements such as, "What are ducks supposed to say?" Thus parents cued their toddlers to humorous intentions by contrasting the jokes to the parents' true knowledge and beliefs. In contrast, utterances referring to pretend play have "at best weak correspondence in the immediate situation" (Veneziano, 2001, p. 331), for example, saying "here is a drink" whilst referring to an empty cup. Parents refer to absent references when pretending (Lillard & Witherington, 2004). For example, when pretending to eat, versus really eating, parents utter more words referring to the act of eating, or the objects involved in eating. Parents may use disbelief statements when joking because they (1) have said something to express disbelief about, and (2) by highlighting wrongness, parents may help toddlers understand the punch line of the joke. Parents may create absent references, a.k.a., belief statements, when pretending because (1) parents must convey what their wrong action was meant to be, e.g., putting a cup to one's mouth is not actually drinking, and so

making statements such as "I'm drinking" could help toddlers understand what the action represents, and (2) the purpose of pretense, unlike joking, is to represent a wrong action as something right in a possible world (Nichols & Stich, 2003), thus belief statements could emphasize the truth-values of the representational state. However the Hoicka et al. (2008) study did not measure belief statements, nor did the Lillard and Witherington (2004) study measure disbelief statements. This study aimed to determine whether parents use belief-based language to differentiate joking and pretense.

A second way in which parents might differentiate joking from pretense is by using humor- and pretense-specific words. Parents used humor-specific words such as "funny" or "silly" more often when reading a humorous versus non-humorous book to their toddlers (Hoicka, et al., 2008). Similarly, parents used the word "pretend" more often when pretending versus being literal (Lillard, et al., 2007). Such words could assist children in linking past and present experiences, and determine whether they are acts of joking or pretense. Indeed, preschoolers are more likely to understand pretend intentions when words such as "pretend" are used (Rakoczy, Tomasello, & Striano, 2006).

In the current study, parents read a book to their toddler which contained two joking, two pretense, and two literal pages. We designed the book in this way so that we could compare (1) cues to joking versus pretending, and (2) cues to literal versus joking speech.

Method

Participants

Twenty-two parents (20 mothers, 2 fathers) and their toddlers (age M = 18 months, 19 days, SD = 2 months, 16 days, $range$ = 15 months, 5 days to 21 months 26 days; 9 boys) participated. One additional participant was not included due to fussiness. Participants were recruited from playgroups, toddler classes, and a press release in the local news paper. Parents and children were primarily Scottish.

Materials

Four illustrated versions of a book, "James' Big Day" were created. See Figure 1 for an example of pages. A Shure head-mounted microphone was fit into an Olympus MP3 recorder to record the parents' speech. A Sony digital camcorder was used to record the visual aspects of the reading session, and as a backup for speech recordings.

Design

This was a within-subjects design. The independent variable was the type of utterance each page conveyed: joking, pretense, or literal. There were a total of six target sentences per book; two conveyed joking, two conveyed pretense, and two conveyed something literal. The books were designed such that the same target sentence conveyed either joking, pretense, or was literal, depending on the

sentences prior to the target sentence, as well as the accompanying images in the books. See Figure 1 for an example. Four different books matched different page types to eight target sentences, and this was counterbalanced. Parents read only one book each. The dependent variables included parents' use of abstract language, belief-based language, and humor- and pretense-specific language.

Coding

Parents' utterances were transcribed from the MP3 files. For parents' use of abstract language, each extra-textual utterance (ETU) was coded for levels of abstraction following Hoicka, et al. (2008), and Van Kleeck, et al. (1997). These included:

Level 1 (perceptual identification, concrete): The utterance refers solely to one object in the event. This level includes object labelling either at the basic, subordinate, or superordinate levels. It also includes stating an intrinsic property of the object (e.g., color) or drawing attention to the object or one of its properties. Examples are "What's that?" and "It's a bowl."

Level 2 (perceptual relationship, concrete): The utterance links two objects or events. The link may involve an intrinsic property (same color), spatial relation (left of, above), a common action (X and Y produce something, or X acts on Y), or a common feeling. Examples are "This car is like the other car." and "The cake is in his hand."

Level 3 (displaced reference, abstract): The utterance links an object or event with an object or event that is absent either in space (spatially displaced reference) or time (past talk), typically including subjective experiences with the object. Examples are "Do you remember seeing a duck in the pond?" and "You have a car at home."

Level 4 (inference, abstract): The utterance conveys one of several inferences, including logical reasoning and imaginary description, or states some social knowledge. Examples are "If he eats that with his hands, he'll make a mess", and "It's like the boy is flying through the air".

Transcripts were separately coded for belief-based language, following Hoicka, et al. (2008) for disbelief statements. All ETUs which followed the target sentences were coded as either a belief statement, a disbelief statement, or neither.

To be coded as a belief statement, the ETU should suggest that the parent believed the assertion of the target sentence. This can be coded in three ways:

General belief statements: statements which express belief that can be applied to any statement, e.g., "That's right", or "It's true"

Sentence-specific belief statements: statements which express belief specifically in relation to the target sentence. This could include a repetition or re-phrasing of the target sentence.

Build-on belief statements: statements which show belief through building on the target sentence. E.g., if the context is that a child is pretending that a basket is a pram, or the child is really sitting in a pram, and the target sentence is

"He's sitting in the pram", the parent might add to this by saying something like "There's the wheel"

To be coded as a disbelief statement, the ETU should suggest that the parent does not believe the assertion of the target sentence. This can be coded in three ways:

General disbelief statements: statements or questions which express disbelief that can be applied to any statement, e.g., "That's wrong", or "That's not true".

Sentence-specific disbelief statements: statements and questions which express disbelief specifically in relation to the target sentence, e.g., for the target utterance, "He's sitting in the pram", the parent might say, "That's not a pram", or "Is that a pram?"

Build-on disbelief statements: statements which show disbelief through building on the target sentence. E.g., for the target sentence, "He's sitting in the pram", parents might say, "Prams should have wheels." or, "What is he really sitting in?"

ETUs were coded for humor-specific words such as jok*, funn*, hilarious, and sill*, and for pretense-specific words such as preten*, imagin*, and make-believe.

Results

No effects of child age were found, so child age was dropped from final analyses. Linear mixed models were used with participant code and target sentence as random variables. Simple contrasts were used to compare Joking to both Pretense and Literal pages.

Abstract Language

Means for Page Type by Abstraction Level can be found in Figure 2. No effects of child gender were found, so child gender was not included in the final analyses. A 3 (Page Type: Pretense, Joking, Literal) X 4 (Level of Abstraction 1-4) mixed model found an effect of Level of Abstraction, $t(503) = 2.87$, $p = .0043$, and an interaction between Level of Abstraction and Page Type, $t(503) = 2.41$, $p = .0165$. Additional models were run to examine interactions.

3 (Page Type) mixed models on Levels 1, 2, and 3 Abstraction using simple contrasts found no effects (Level 1: Pretense $M = 0.70$, $SD = 1.19$; Joking $M = 0.75$, $SD = 1.45$; Literal $M = 0.93$, $SD = 1.53$; Level 2: Pretense $M = 0.34$, $SD = 0.71$; Joking $M = 0.55$, $SD = 1.09$; Literal $M = 0.23$, $SD = 0.60$; Level 3: Pretense $M = 0.18$, $SD = 0.50$; Joking $M = 0.32$, $SD = 0.83$; Literal $M = 0.23$, $SD = 0.60$). A 3 (Page Type) mixed model on Level 4 Abstraction using a simple contrast found that parents uttered significantly more Level 4 ETUs when reading Joking ($M = 1.34$, $SD = 1.58$) versus Literal pages ($M = 0.61$, $SD = 1.22$), $t(108) = 2.64$, $p = .0094$. There was no difference between Joking and Pretense ($M = 1.30$, $SD = 1.72$) pages.

Belief-Based Language

Means for Page Type by Belief-based Language can be found in Figure 3. A 3 (Page Type: Pretense, Joking, Literal) X 2 (Statement Type: Belief, Disbelief) X 2(Child Gender) mixed model found effects of Page Type (Pretend

vs. Joking), $t(232) = 5.07$, $p < .0001$; Page Type (Joking vs. Literal), $t(232) = 2.17$, $p = .0309$; an interaction between Statement Type and Page Type (Pretend vs. Joking), $t(232) = 5.04$, $p < .0001$; an interaction between Statement Type and Page Type (Joking vs. Literal), $t(232) = 3.27$, $p = .0012$; and an interaction between Statement Type, Page Type (Joking vs. Literal), and Child Gender, $t(232) = 2.35$, $p = .0197$. Additional models were run to examine interactions.

No effects of child gender were found for disbelief statements, so were dropped from the following analysis. A 3 (Page Type: Pretense, Joking, Literal) mixed model for disbelief statements with a simple contrast found that parents used significantly more disbelief statements when expressing Joking ($M = 1.45$, $SD = 1.70$) versus Pretense ($M = 0.39$, $SD = 0.92$), $t(108) = 2.42$, $p = .0173$, and when expressing Joking versus Literal ($M = 0.18$, $SD = 0.45$) speech, $t(108) = 4.03$, $p < .0001$.

A 3 (Page Type: Pretense, Joking, Literal) X 2 (Child Gender) mixed model for belief statements with a simple contrast found that parents used significantly more belief statements when expressing Pretense ($M = 0.66$, $SD = 1.35$) versus Joking ($M = 0.36$, $SD = 0.75$), $t(108) = 2.70$, $p = .0080$. An interaction between Child Gender and Page Type (Pretense, Joking), was found, $t(108) = 2.90$, $p = .0045$, such that parents used more belief statements when expressing Pretense to boys versus girls, but more belief statements when expressing Joking to girls versus boys. There was no difference between Joking and Literal ($M = 0.68$, $SD = 0.88$) speech.

Humor- and Pretense-Specific Words

Means for Page Type by use of humor- and pretense-specific words can be found in Figure 4. No effects of child gender were found, so child gender was not included in the final analyses. A 3 (Page Type: Pretense, Joking, Literal) X 2 (Word Type: Humor, Pretense) mixed model found effects of Page Type (Pretense vs. Joking), $t(237) = 2.40$, $p = .0173$; Page Type (Joking vs. Literal), $t(237) = 2.40$, $p = .0173$; and an interaction between Word Type and Page Type (Pretense vs. Joking), $t(237) = 2.87$, $p = .0045$. Additional models were run to examine interactions.

A 3 (Page Type: Joking, Pretense, Literal) mixed model for humor-specific words using a simple contrast found that parents used significantly more humor-specific words when expressing Joking ($M = 0.32$, $SD = 0.64$) versus Pretense ($M = 0.02$, $SD = 0.15$), $t(108) = 2.12$, $p = .0366$, and when expressing Joking versus Literal speech ($M = 0.02$, $SD = 0.15$), $t(108) = 2.12$, $p = .0366$.

A 3 (Page Type: Pretense, Joking, Literal) mixed model for pretense-specific words using a simple contrast found that parents used significantly more pretense-specific words in the Pretense ($M = 0.11$, $SD = 0.44$) versus Joking ($M = 0.02$, $SD = 0.15$) conditions, $t(108) = 2.05$, $p = .0427$. There was no difference between the Joking and Literal ($M = 0$, $SD = 0$) conditions.

Discussion

The current study investigated whether parents use linguistic cues to differentiate (1) joking from pretense, and (2) joking from literal speech

Joking vs. Pretense

This research provides the first evidence that parents use belief-based language to differentially cue toddlers to joking and pretense. Parents used significantly more disbelief statements and significantly fewer belief statements when reading joking versus pretense pages. Parents also used significantly more humor-specific words when reading joking versus pretense pages, and significantly more pretense-specific words when reading pretense versus joking pages.

While intentionality research typically focuses on whether or not children understand intentions (e.g., Carpenter, Akhtar, & Tomasello, 1998; Gergely, Bekkering, & Király, 2002; Meltzoff, 1995) little research has examined how children come to understand intentions to do the wrong thing, and how children come to distinguish amongst various types of intentions. The current study demonstrates that parents offer toddlers linguistic cues to distinguish between joking and pretense. Thus it may be the case that children learn to distinguish amongst abstract, non-literal concepts such as jokes and pretense. In particular, hearing proportionally more disbelief statements and proportionally fewer belief statements when encountering joking could allow a child to identify the reference to the wrong act, and to identify that the act was meant only as a wrong act and nothing else. In contrast, by hearing a more even mixture of belief and disbelief statements when encountering pretense, children could identify the reference to the wrong act through disbelief statements, and could also identify the representation of the wrong act through belief statements. Additionally, humor-specific words could help toddlers link past and present humorous situations, while pretense-specific words could help toddler link past and present pretense situations.

Literal vs. Non-literal Speech

The current study found that parents used more high-level abstract language when reading joking versus literal pages. This replicates findings that parents use high-level abstract language to cue humor (Hoicka, et al., 2008). This also converges with findings that abstract language cues adults to both metaphor and irony (Hoicka, 2010; Torreano, et al., 2005), two other non-literal abstract concepts. Interestingly, there was no difference between the amount of high-level abstract language that parents used to cue joking versus pretense. Thus parents may use abstract language in order to cue their children to both joking and pretense. This may allow toddlers to think in an abstract way in order to resolve the joke, or understand the representation underlying the pretense.

The current study also found that parents used more disbelief statements when expressing joking versus literal concepts. Additionally, parents used significantly more humor-specific words such as "funny" and "silly" when reading joking versus literal pages. This replicates and extends past research which found that parents use disbelief statements, as well as humor-specific words to cue humor (Hoicka, et al., 2008).

The present findings suggest that parents may bootstrap non-literal concepts, such as joking and pretending, by helping their toddlers to think in an abstract way, and by identifying that what was said is not literally true. These linguistic cues could also help toddlers identify what exactly made the situation false. Additionally, given that toddlers do not understand that others can intend to joke until they are 2 years old (Hoicka & Gattis, 2008), and do not understand that others can intend to pretend until they are 3 years old (Rakoczy, Tomasello, & Striano, 2004), abstract and belief-based language may help toddlers realize that others can intend to do or say the wrong thing in the first place.

Future Research

Future Research will examine whether mothers and fathers give the same or different types of linguistic cues to differentiate joking and pretense, and to differentiate literal from non-literal speech. Additionally, we will examine whether parents use the same types of linguistic cues when engaging in acts of joking and pretense with their toddlers, as compared to when they read about these concepts. Finally, future research should also consider whether toddlers can use these cues to adequately differentiate joking from pretense, and literal versus non-literal events.

Figures

Pretense:
James and his big sister Katie are playing make-believe. Katie crawls around and meows. Meow meow. Mummy asks, "What was that?" James knows…
It was a cat.
Joking:
James and his big sister Katie go in the yard. They hear some barking. Ruff ruff. Mummy says, "What was that?" James wants to make a funny joke…
It was a cat.

Literal:
James and his big sister Katie are really excited because Mummy brought home a new pet. They hear something go meow meow. What was the pet?
It was a cat.

Figure 1: Examples of Page Types for same target sentence. Original images were in color.
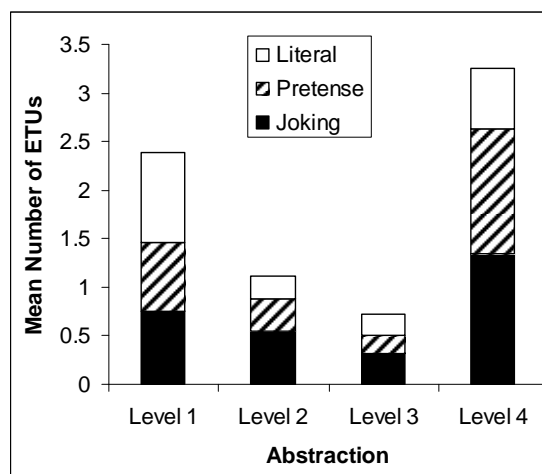
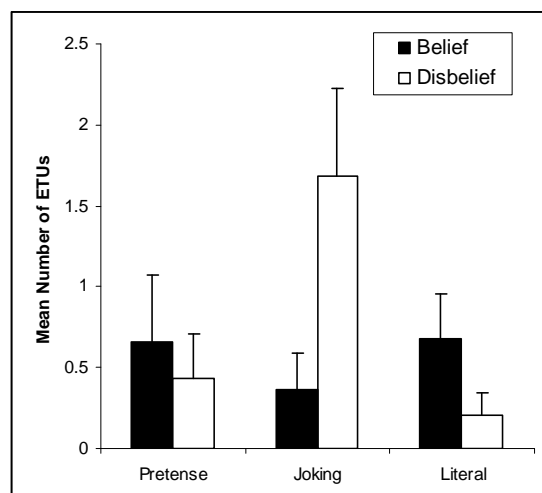Figure 2: Mean number of ETUs for each Level of Abstraction

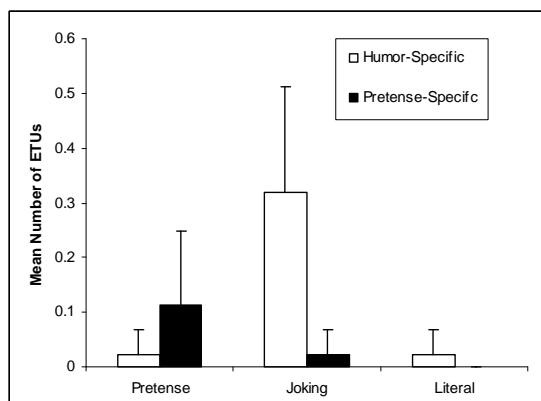Figure 3: Mean number of ETUs expressing Belief and Disbelief.

Figure 4: Mean numbers of ETUs using humor- and pretense-specific words.

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