

Understanding Teasing: Lessons From Children With Autism

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Teasing requires the ability to understand intention, nonliteral communication, pretense, and social context. Children with autism experience difficulty with such skills, and consequently, are expected to have difficulty with teasing. To better understand teasing concepts and behaviors, children with autism, their parents, and age and Verbal-IQ-matched comparison children and parents described concepts and experiences of teasing and engaged in a parent–child teasing interaction. The teasing of children with autism was less playful and provocative and focused less on social norms than that of comparison children. Similarly, parents of children with autism teased in less playful ways. Scores on a theory of mind task accounted for several of the observed differences. Discussion focused on the importance of understanding social context and playful behavior during teasing.

KEY WORDS: autism; social interaction; theory of mind; teasing.

*“There are some things I don’t know so much about. . . .
Teasing is one of them.”*

—A participant with autism, 11 years old.

Teasing is a complex yet vital social interaction through which people socialize each other, enter into and maintain relationships, and negotiate group membership and social hierarchies. Nearly everyone engages in teasing and it is especially common among family members and peers. Anecdotally, teasing appears to be especially problematic for children with autism: they tease ineffectively and seem to have difficulty understanding why they are being teased (Grandin, 1995). A conceptual analysis of teasing suggests why. The comprehension of teasing requires forms of social understanding that children with autism find difficult, including the ability to understand intention, nonliteral communication, pretense, and social context (Keltner, Capps, Kring, Young, & Heerey, 2001). On the basis of this reasoning, we tested hypotheses relating autism to (1) teasing behavior, (2) recounted experiences of teasing, and (3) positive and negative concepts of

teasing. High-functioning children with autism and their parents and comparison children and their parents participated in an interview about teasing concepts and experiences as well as a parent–child teasing interaction wherein they invented nicknames for one another.

Definitions of Teasing

The term “teasing” has been applied to myriad social behaviors, ranging from hostile bullying (Smith & Brain, 2000), to the affectionate, playful idioms of romantic partners (Bell & Healey, 1992). To bring order to this heterogeneous category of behaviors, we have defined teasing as a provocation that comments on something of relevance to the target (Keltner et al., 2001). The provocation can be verbal (e.g., an insult or comment on deviant behavior) or nonverbal (e.g., a poke in the ribs). To reduce the hostility of this provocation, the teaser may employ playful or “off-record” markers, which convey that the provocation is to be taken partly in the spirit of play. Off-record markers include verbal comments (e.g., “just kidding”), facial displays (e.g., smiles), grammatical devices (e.g., repetition, exaggeration), and prosodic cues (e.g., sing-song voice) that signal that the provocation is not entirely serious. Teasing then, is a form of provocation (criticism or hostility) mitigated by off-record markers (playful gestures), each of which may be present to varying degrees. This type of teasing is considered prosocial, in that its

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general aim is to comment upon or correct an aspect of the target's social behavior.

Social Understanding and Teasing

Although it may be parsed in other ways, our definition suggests that the generation and comprehension of teasing hinges on several abilities. Elemental to the understanding of teasing are fairly sophisticated abilities in the comprehension of intention. In provoking in playful fashion, the tease conveys both intent to criticize, and playful, affectionate intent. The effective teaser then, must be able to convey these conflicting intentions and the recipient to decipher them, often during relatively brief, emotionally charged exchanges.

Teasing also requires adroitness in nonliteral communication. Much of the playful content of a tease is nonliteral, seen in the smiles, prosodic variations (e.g., sing-song voice), and grammatical devices (e.g., exaggeration) that indirectly render the provocation less hostile. Thus, in understanding teasing, one must infer the implied meanings based on the juxtaposition of the literal provocation and the nonliteral meaning in a set of subtle paralinguistic acts.

Teasing further involves elements of pretense that, to be understood properly, require the ability to assume pretend roles and stances (for elaboration on this notion, see Clark, 1996; Clark & Gerrig, 1984; Keltner et al., 2001). That is, teasing conveys coexisting literal and nonliteral representations of the target of a tease, which necessitate that individuals differentiate reality from pretense (Leslie, 1987). As in other forms of ostensible communication, the teaser and target assume hypothetical identities, and the teaser delivers a provocation to the target. The hypothetical teaser intends the provocation to be serious, and the hypothetical target receives it as such. The actual target however, is expected to discover the pretense and to understand the actual teaser's attitude toward the hypothetical teaser, the hypothetical target, and the provocation (Clark & Gerrig, 1984). The ability to produce and interpret acts of pretense is therefore critical to teasing.

Finally, teasing typically comments upon some deviation from the social norm (e.g., Keltner, Young, Heerey, Oemig, & Monarch, 1998; Shapiro, Baumeister, & Kessler, 1991). Social norms constitute the set of expectations that govern behavior and interactions both among group members (e.g., fraternity brothers, romantic partners, family members) and between the group and the outside world. The norm related focus of much teasing points, somewhat ironically, to the prosocial ends of teasing: in teasing, the teaser implies an interest in the target's engagement in

socially appropriate behavior (Bell, Buerkel-Rothfuss, & Gore, 1987; Eder, 1993; Eisenberg, 1986). Thus, understanding social norms and the actions that violate them is a central element in the provocation of a tease.

Children understand the provocative nature of teasing early on, evident in their universally negative views thereof. By ages 10–11 however, they have begun to conceptualize teasing as more positive and prosocial, and to tease both more playfully and provocatively, while continuing to report negative feelings about teasing (Warm, 1997). This developmental shift is likely related to the engagement of these interrelated abilities, upon which we have argued prosocial teasing hinges. Children with autism have difficulties with such skills, suggesting that the positive side of teasing will prove elusive.

Autism and the Understanding of Intention

A hallmark of autistic disorder is difficulty with theory of mind, the ability to understand mental states, such as the intentions of others (Flavell, 1999). Theory of mind has been linked to forms of speech and social reasoning that presuppose an understanding of others' mental states (Frith, Happe, & Siddons, 1994; Happe, 1993). The set of abilities that we propose to underlie teasing are all aspects of theory of mind.

Higher functioning children with autism have difficulty in using a character's probable mental state or intention to explain the character's ambiguous speech or behavior (Abell, Happe, & Frith, 2000; Tager-Flusberg, 1999). For example, in Happe's "Strange Stories" task, children were asked to interpret short social vignettes in which an ambiguous statement was made. In one vignette, a child coughs throughout lunch. Her father says, "Poor Emma. You must have a frog in your throat." Relative to comparison children, children with autism were more likely to conclude that such statements were literally true and used fewer explanations involving mental states (Happe, 1994). This kind of evidence suggests that children with autism will have difficulty discerning the playful intent of a tease that is typically conveyed in an ambiguous, nonliteral fashion. This diminished capacity to recognize social intentions may serve to make the true meaning of a tease remain opaque.

Nonliteral Communication and Children With Autism

Autism is associated with a host of difficulties in the realm of communication (Tager-Flusberg, 1999), including difficulties deciphering nonliteral language (Perner,

Frith, Leslie, & Leekam, 1989). Children with autism tend to explain social communications using systems of interpretation that rely on the literal meaning of an utterance (Hobson, 1989). For example, individuals with autism frequently have difficulty interpreting speech acts that rely on the listener's implicit understanding of general social conventions or prior knowledge (e.g., "Do you know what time it is?"). Despite the fact that the speaker has not specifically inquired about the time, the listener is expected to understand that the time of day is being requested and to respond accordingly. Individuals with autism may respond literally to the utterance (e.g., "Yes. I know what time it is."), rather than to the nonliteral, indirect meaning the speaker has implied (Bara, Bosco, & Bucciarelli, 1999; Frith, 1989).

The use of idiomatic language, another variety of nonliteral communication that is common to teasing, particularly in the use of nicknames (Bell & Healey, 1992), has been shown to be difficult for individuals with autism. In one study, a group of high-functioning adults with autism showed performance deficits, relative to a comparison group, on a task in which they identified idioms (e.g., "pot luck," "fat chance," "point blank," etc., Strandburg, Marsh, Brown, & Asarnow, 1993). Sarcasm is also difficult for children with autism. Instead of attending to the voice tone and prosody used in delivery, children with autism are likely to erroneously respond only to the verbal content of a remark, missing its intended meaning (Frith, 1989). Because the intended meaning of a tease is commonly conveyed in a nonliteral or indirect fashion (Keltner et al., 2001), tease interpretation is likely to be problematic for children with autism.

Pretense, Play, and Children With Autism

Spontaneous pretend play, common among toddlers and young children, appears to present difficulty for individuals with autism. Although children with autism have been shown to engage in pretend play, in particular when initiated by others (Jarrold, Boucher, & Smith, 1993), they are less likely to spontaneously use objects in imaginative ways and tend to prefer literal play to that involving pretense (Charman & Baron-Cohen, 1997). Moreover, they have been shown to engage in less spontaneous functional play and imitative play than their peers (Jarrold et al., 1993). In social interaction, deficits in spontaneous play may manifest as a dearth in nonverbal gestures and playful verbal and nonverbal actions (Mundy, Sigman, & Kasari, 1990). Because teasing can be viewed as a form of social pretense, children with autism may find its playful aspects both difficult to initiate and to understand.

Understanding of Social Context Among Children With Autism

As teasing becomes more sophisticated it increasingly revolves around socialization (Keltner et al., 2001). Children with autism have been shown to be less sensitive to the social environment than comparison children (Capps & Sigman, 1996). For instance, individuals with autism seem to be more inclined to resist following norms governing social comportment (Frith, 1989; Szatmari, Offord, Siegel, & Finlayson, 1990), which may stem from difficulty in identifying inappropriate behaviors. In studies of judgments of behaviors, children with autism had more difficulty identifying and explaining inappropriate social behaviors (Loveland, Pearson, Tunali-Kotoski, Ortegón, & Gibbs, 2001), and faux pas than did comparison participants (Baron-Cohen, O'Riordan, Stone, Jones, & Plaisted, 1999). Thus, some of the social deficits manifested in children with autism may stem from their apparent lack of knowledge about important social norms, implying difficulty in understanding teasing.

CURRENT RESEARCH

The developmental literature suggests that with increased social understanding, teasing becomes more symbolic and playful (Warm, 1997), more focused on social norms (Keltner et al., 2001), and more positive (Shapiro et al., 1991). In concrete terms, this literature suggests that whereas the hostile, provocative component of teasing varies only slightly across level of social understanding, the more playful, prosocial components of teasing increase in volume and sophistication with social development, prompting change in individuals' interpretations of teasing (Lightner, Bollmer, Harris, Milich, & Scambler, 2000). On the basis of our definition of teasing and what is known about autism-related difficulties in social understanding, we expect both the understanding and generation of teasing to be problematic for children with autism.

As a final note about teasing, parents play an important and early role in children's teasing (Keltner et al., 2001). Parents of children with autism have a great deal of concern about the teasing their children relate and, anecdotally, attempt to soften the sting of this often painful interaction (Barron & Barron, 1992). However, parents of children with autism report occasional bouts of friendly, ritualized teasing or joking with their children, often centered on daily routines (McDonnell, 1993). It is therefore likely that parents of children with autism, like those of, typically developing children, adapt their teasing to meet the capabilities of their children.

METHODS

As part of a larger study of social understanding, children with high-functioning autism, typically developing children, and their parents were interviewed about their concepts as well as their experiences with teasing. In addition, parents and their children engaged in a dyadic teasing interaction in which they invented and shared nicknames for one another.

Participants

Participants included 43 children: 23 nonretarded children with diagnoses of autism ($n = 10$) or Asperger's syndrome ($n = 13$) comprised the high-functioning autism/Asperger's syndrome (HFA) group, and 20 typically developing children made up the comparison group. HFA participants were recruited through clinicians, none of whom were affiliated with the project. To confirm diagnoses of either autism or Asperger's syndrome, one or both parents of HFA children were administered the Autism Diagnostic Interview-Revised (ADI-R; Lord, Rutter, & Le Couteur, 1994), which generates diagnoses based on *DSM-IV* criteria. The ADI-R achieves reliable diagnoses of autism and Asperger's syndrome across genders and age groups (for specific findings, see Pilowsky, Yirmiya, Shulman, & Dover, 1998). No significant differences emerged between participants with autism and those with Asperger's syndrome on any measured variables. Thus, analyses (below) did not distinguish participants by diagnosis.

Only children whose current Verbal, Performance, and Full Scale IQ scores, as measured using the Wechsler Intelligence Scale for Children, Edition III (WISC-III; Wechsler, 1991), were 80 or higher were included in the study. A cutoff of 80 ensured that study participants were within the normal range on the WISC-III and that no child had mental retardation. All HFA children were working at age appropriate grade-levels and 21 of the 23 children were being educated in mainstreamed school environments. Two attended a private school for children with learning disabilities. Autism and Asperger's syndrome affect boys at higher rates than girls (Capps & Sigman, 1996). This bias was reflected in our HFA sample, 18 of whom were boys.

Comparison children were recruited from local schools and recreation programs in a large metropolitan area. As indicated during a telephone screening, none of the children had prior psychiatric histories nor were they being treated for psychological difficulties of any kind. In addition, the presence of a Pervasive Developmental

Disorder was ruled out using a parent-report questionnaire, the Pervasive Developmental Disorder Screening Test (Siegel, 1986). Groups were statistically matched on verbal IQ, chronological age, and gender (for a discussion of age and verbal IQ matching in studies of high-functioning autism see Ozonoff, Rogers, & Pennington, 1991). There were no group differences on Verbal IQ ($M_{\text{HFA}} = 103.82(14.86)$; $M_{\text{Control}} = 106.00(7.97)$; $t(38) = .86, ns$), from the WISC-III. All children were aged 8 to 15 years, and the groups did not differ on age, ($M_{\text{HFA}} = 10.92(2.62)$; $M_{\text{Control}} = 10.57(1.21)$; $t(38) = 1.18, ns$) or gender (HFA: 5 girls; 18 boys; Control: 4 girls; 16 boys; $\chi^2(1) = 0.75, ns$). All children received \$10/hr in appreciation of their participation.

Procedure

Testing was completed in two 2-hr sessions, typically occurring 5 to 7 days apart, during which children completed the WISC-III and a battery of tasks assessing social understanding, emotion, theory of mind, and narrative competence. Sessions were videotaped using Panasonic video cameras that were visible to participants. All participants were seated at a table across from an experimenter and cameras were positioned such that the participant's face, upper body, and a portion of the table were in view at all times. One of the tasks presented during the first study session, an interview about teasing, generated data relevant to the present investigation. A parent-child teasing interaction (adapted from Keltner et al., 1998) was conducted during the second study session and these data were also included in the present study. Finally, a theory of mind task, Strange Stories (Happé, 1994), was administered to children for the purposes of relating theory of mind to children's teasing behaviors and concepts.

Parent-Child Teasing Interaction

Children and their parents were seated side-by-side, across a table from two experimenters. The experimenters, both of whom had worked closely with children and their parents during the study sessions, introduced and modeled the task. Participants were told that they would be playing a "nickname game" in which they would each be asked to invent a nickname for the other and explain that nickname. To allow participants to "warm-up" to the interaction setting, they were asked to describe any nicknames they had for one another at home and whether other members of their families had nicknames. Experimenters then explained that they would invent nicknames for one another, which could be real or fanciful, and provide a brief

rationale for each nickname. No constraints were placed on the generation of nicknames. Experimenter 1 demonstrated the game by teasing Experimenter 2 (i.e., “I would call you, T.F. for Tomato Face because of the way you blush when you get called nicknames.”). Experimenter 2 likewise demonstrated the procedure by inventing a nickname for the child (i.e., “I would call you S.P., for Smarty Pants because you were so smart in our study today.”). All participants heard the same two introductory nicknames. Participants’ questions were answered and children were prompted to deliver their nicknames (e.g., “Can you think of a nickname for your mom?”). Children delivered their nicknames and, if they did not spontaneously generate a rationale for the nickname, were prompted to do so (e.g., “Why would you call her that?”). Parents were then asked, using similar prompts, to invent and explain a nickname for the child.

If a child was unable to generate the first nickname, as was the case with 13 children across the groups, the parent was prompted to produce and explain a nickname for the child. Following the parent’s delivery, the child was again prompted to invent a nickname for the parent. If the child was still unable to generate a nickname (two comparison children and four HFA children), the game was concluded without the child’s tease. No parent was unable to generate a nickname.

Child and Parent Teasing Interviews

Teasing Concepts

Teasing interviews for both children and parents began similarly. Participants were asked, “How do you define teasing?” If the participant was unsure about the meaning of the question or unable to answer, the experimenter provided a second prompt: “When you think of teasing, what comes to mind?” All participants understood and answered the second prompt, providing three to five different ideas about teasing.

Teasing Experiences

Following the prompts for concepts of teasing, participants were asked to recount teasing experiences by describing times when they teased and were teased by others. Specifically, children were asked to describe one incident of teasing when they teased, and one incident of teasing when they were teased by peers at school, parents at home, and, if applicable, siblings at home. Thus, children with siblings were prompted to recount a total of six teasing episodes: (1) as the target of peer teasing, (2) when teas-

ing a peer, (3) as the target of a parent’s teasing, (4) when teasing a parent, (5) as the target of sibling teasing, and (6) when teasing a sibling. Children without siblings were asked to recount four teasing episodes, excluding prompts about sibling teasing. Parents were asked to recall a time in which (1) they teased the child in the study and (2) the child in the study teased them. Parents of more than one child were additionally prompted to describe teasing interactions with each of their other children, as they had with, the child in the study. Participants were asked to provide accounts of their teasing interactions but were not specifically prompted for details (e.g., “Tell me about a time when you were teased by your brother. Tell me what happened.” or “Tell me about a time when you teased your mom or dad. Tell me what happened.”).

Strange Stories Task

A theory of mind measure, consisting of 12 short vignettes in which story characters produce ambiguous speech or actions (e.g., a child, playing with a friend, picks up a banana from a fruit bowl, holds it to her ear and says, “Look! This banana is a telephone!”), was administered (for a description of the “strange stories” theory of mind task as well as scoring information and related findings see Happe, 1994). The experimenter read each vignette aloud to the child and then asked the child to answer two questions about the story: “Was it true, what [a story character] said?” and “Why did [the story character] say that?” Positive comments were made during testing but children were given no feedback about whether their answers were correct.

Coding of Child–Parent Teasing Interactions

Teasing interactions were coded from videotape for the following items:

Tease Classification

Each tease was classified according to type of teasing: *social norm violation* (a tease relating to a social norm, e.g., “pant-a-balloon” for a child who wears “pants that look 5 sizes too big”), *character teasing* (a tease relating to a consistent aspect of an individual’s being, e.g., “little go-go” for a child who “is always on the go and never seems to get tired”), or *endearing nickname* (often a current nickname of the parent or a nickname of the child during infancy, e.g., “shin-shin” meaning “little star” in Chinese). It was seldom apparent from the nickname alone

how a tease should be classified. Therefore, in all cases both nickname and rationale were used in classification. Ninety-two percent of teases were uniquely classified into the three categories. The remaining nine teases, all generated by children (two comparison and seven HFA), included nicknames that were either entirely nonverbal, or were a combination of nonverbal gestures (e.g., sticking out tongue) and verbalized sounds that did not include words (e.g., sniffing, sighing). Six of the nine teases included verbal rationales. These teases, including the nickname and rationale, were classified and analyzed for both verbal content and nonverbal behavior (see below). The remaining 3 teases, all generated by HFA children, contained no verbal content and were analyzed for nonverbal behavior only.

Verbal Content

The verbal content of each tease was rated on two, unipolar, 7-point Likert scales according to how *affiliative* and how *critical* it was of the recipient (1 = *not at all affiliative/critical*; 7 = *extremely affiliative/critical*). Affiliative teases were those in which the verbal content of either the nickname or rationale included praise, endearment, references to positive behaviors, etc. For example, one child was nicknamed “Super-Student” by his mother due to a straight-A report card. This tease was considered affiliative because the tease centered on a positive topic, being a good student, and involved praise. Critical teases involved topics such as negative aspects of the recipient’s character, accidents, mistakes, or teases in which the recipient was accused of untoward behavior. For example, one child called her father “Creative Farts” due to public flatulence.

Playful and Critical Behaviors

On the basis of a summary of the literature regarding nonverbal markers of teasing (Keltner et al., 2001), we coded playful behaviors, including friendly laughter, smiles, playful prosody (sing-song voice), playful gestures (waving), reassuring physical contact (hand-holding, patting the interaction partner), and playful mimicry (playful parody of an action or other person designed to promote laughter). Critical behaviors included frowns, sneers, grimaces, polite smiles, critical prosody (e.g., sarcastic tones), critical gestures (e.g., sticking out tongue), aggressive physical contact or actions (e.g., slapping, poking, pretending to hit another), and hostile mimicry (e.g., parody of an action or other designed to mock). For each tease, we summed the number of observations of playful,

off-record markers and the number of critical gestures to generate a total number of playful and critical behaviors per participant.

Coding Teasing Interviews

Interviews were coded from videotapes for verbal content. Unless otherwise noted, all data generated were frequency counts.

Teasing Concepts

We coded participants’ concepts of teasing as either (1) *positive*: if the response indicated that teasing could be viewed as enjoyable (e.g., “teasing is playful,” “joking around,” “fun”) or (2) *negative*: if the response indicated that teasing was unpleasant (e.g., “teasing is being mean,” “bullying,” “hurting someone’s feelings”). Each participant spontaneously generated at least two distinct concepts of teasing that were coded as either positive or negative. The total number of negative concepts reflected the number of unique negative statements participants made about teasing. Total positive concepts were similarly calculated.

Teasing Experiences

We coded participants’ recounted teasing experiences as follows:

Social Context

Recounted teasing experiences were coded for the total number of references made in each of the following domains: (1) *antecedents*: or why the tease happened, were coded from descriptions of the actions leading up to the tease itself (e.g., “I kept missing my shot at basketball . . .”); and (2) *consequences*: the results of the tease, were coded from descriptions of the outcome of a tease (e.g., “. . . so I concentrated hard and made all the rest of my shots except one, then [the teaser] couldn’t say anything about that anymore.”).

Valence

The verbal content of a tease can be classified as either positive or negative in valence according to whether the tease is about positive or negative behaviors or traits (see Keltner et al., 1998). For example, a child who reports being teased about outstanding athletic or academic ability is being teased about a positive ability, even though

the child may not report feeling positive during the tease. Teasing with negative content involves negative traits or behaviors, such as irritability, as in the case of a child teased about picking fights with a sibling. Recounted teasing experiences were classified as either (1) *positive* or (2) *negative* in content valence. Valence was coded independently of the child's interpretation of the tease.

Teasing Categories

Teasing experiences were classified into four categories (see Warm, 1997). Teases about violations of social norms, e.g., things someone *does* such as dropping a lunch tray in the school cafeteria, were classified as *social norm violations*. Teasing experiences that focused on an individual's physical or psychological character, such as a personality trait (being very nice), physical trait (having a large nose), or mental characteristic (being forgetful), were classified as *character teasing*. Descriptions of mimicry, name calling, mocking, and physical teasing (poking, hitting, touching) were categorized as *taunting*. Practical jokes, pranks, tricks, white lies, and descriptions of situations in which a person is led to believe something false were classified as *trickery*. All but two of the teasing descriptions (about 99%) were classified into one of the four categories.

For the three measures of recounted experiences—social context, valence, and tease category—we summed the scores across all recounted experiences for each measure and then divided by the number of experiences that the participant recounted. In our data analysis, we collapsed across teaser and target experiences, because a number of HFA children (7) did not recount a time when they teased someone.

Coding of Strange Stories

Children's responses to the strange stories task were coded as follows. Children who generated correct answers to the first question ("Was it true, what [story character] said?"), and explained their answers with reference to the social process of the story, received 2 points. Those who generated correct answers to the first question but explained their answers using incorrect mental or social processes or the perceptual features of the story received a score of 1 point. Children who answered incorrectly and explained their answers referring to no mental or social processes or said, "I don't know," received scores of 0. Scores were summed, yielding a maximum score of 24 points (for complete results, see Sobel, Capps & Gopnik, 1999).

Coding and Reliability

All coders were blind to both participants' group status and to experimental hypotheses. A group of four undergraduate research assistants were trained to classify teases and code playful and hostile content and behavior. Each rater coded two interactions under the supervision of the first author and worked independently thereafter. Excluding the six children who were unable to generate nicknames, a total of 80 teases were generated and coded during the interaction.

To assess reliability, each tease was independently coded by two raters. The reliability of raters' tease classifications was assessed using a kappa coefficient ($\kappa = .84$). Intraclass correlation coefficients were calculated for ratings of verbal content as well as participants' nonverbal behavior. These ranged from .64 to .91. Analyses were conducted using a data set that reflected, for each tease, the average of the two raters' codes.

Two undergraduate research assistants, not associated with the coding of the teasing interactions, worked to code teasing interviews. Each coded several interviews under the supervision of the first author, and thereafter worked individually from videotapes to generate data relevant to the investigation of teasing interviews. Coders overlapped their coding such that about half of the interviews (46) were coded independently by two coders.

For the child-teasing interviews, the intraclass correlations between coders' ratings of items relating to concepts and experiences of teasing, including definitions, antecedents, consequences, social context, functions, and nonverbal behaviors ranged from .69 to .89. In addition, each teasing episode was classified according to its content category: social norm violation, character teasing, taunting, or trickery ($\kappa = .76$). For parent-teasing interviews, the intraclass correlations between coders' ratings of items relating to concepts and experiences of teasing ranged from .71 to .94. Classification of parent-reported teasing episodes according to content categories yielded a kappa coefficient of .73.

Two raters coded the theory of mind data from transcripts. These coders were independent of those who had coded the teasing interactions and interviews. They attained a high level of agreement ($\kappa = .87$).

RESULTS

Because of the interactive nature of the task, teasing interactions were analyzed by dyad. We conducted a mixed model ANOVA, treating group (HFA, comparison) as the between-dyad variable and participant (parent,

child) as the within-dyad variable. Post hoc tests comparing children from the two groups and parents from the two groups were conducted on significant omnibus F s using the Newman-Keuls correction for type I error rates (Glass & Hopkins, 1996). For teasing interviews, parents' and children's data were analyzed separately, again using the Newman-Keuls method to control error rates.

Teasing Behavior

We hypothesized that children with autism and their parents would have particular difficulty generating the playful component of teasing, which hinges on the use of nonliteral, off-record markers and pretense. Consistent with this hypothesis, a mixed model ANOVA found that comparison children and their parents used more playful behaviors, such as smiles, unusual intonation, and exaggerated gestures in their teasing than did children with autism and their parents, $F(1, 40) = 8.06$; $p < .01$ (see Table I for means). More specific analyses revealed that comparison children used more playful behaviors than did HFA children, $t(38) = 2.42$; $p < .05$, as did comparison group parents when compared with HFA group parents, $t(38) = 2.56$; $p < .05$. Parents and children did not differ in the extent to which they incorporated playful behaviors into their teasing, $F(1, 40) = .90$; ns .

Given anecdotal evidence suggesting that provocative teasing is problematic for children with autism, we expected HFA group participants to tease in more affiliative, less critical ways than comparison group participants. Mixed-model ANOVAs demonstrated that comparison participants were (1) less affiliative, $F(1, 40) = 6.64$; $p < .01$, and (2) more critical, $F(1, 40) = 8.93$; $p < .01$, in their teasing than were HFA participants. These same analyses revealed that regardless of group, parents were

less critical of their children than children were of their parents, $F(1, 40) = 8.67$; $p < .01$, and also more affiliative while teasing than were children, $F(1, 40) = 17.50$; $p < .001$. More focused comparisons revealed that children in the HFA group did not tease in more affiliative fashion than comparison children, $t(38) = 0.95$; ns , although parents of HFA children were indeed more affiliative in their teasing than comparison parents, $t(38) = 2.70$; $p < .01$. Comparison children did, however, tease in more critical ways than did HFA children, $t(38) = 2.01$; $p < .05$. Likewise, comparison group parents were more critical of their children than were HFA group parents, $t(38) = 3.40$; $p < .01$.

In the analysis of critical behaviors, including critical gestures, frowns, and sarcastic intonation, mixed model ANOVA yielded neither differences between the HFA and comparison groups, $F(1, 40) = 0.89$, ns , nor between parents and children, $F(1, 40) = 0.17$; ns .

We now turn to the normative content of the teasing. We had predicted that HFA children and their parents would be less likely to tease about social norms than comparison parents. Recall that the teases were classified according to whether the tease referred to a social norm violation, the individual's character, or an endearing nickname. There were no group differences in the number of times participants teased about aspects of character (means appear in Table I; $F(1, 40) = 1.82$, ns). The number of teases classified as endearing nicknames did not differ among parents and children, $F(1, 40) = 1.18$, ns , nor did it differ across HFA and comparison groups, $F(1, 40) = 1.75$, ns , although children in the HFA group tended to use more endearing nicknames than did children in the comparison group, $t(38) = 1.80$; $p < .10$. Consistent with our expectations, comparison group participants teased about social norm violations more frequently than did HFA group participants, $F(1, 40) = 8.04$; $p < .01$, and, as one might

Table I. Content and Behavior in Teasing Interactions

	Children		Parents	
	HFA ($N = 23$)	Comparison ($N = 20$)	HFA ($N = 23$)	Comparison ($N = 20$)
Nonverbal behaviors				
Playful	1.61 (1.23)	2.27 (1.08)	1.39 (1.15)	2.07 (1.19)
Critical	0.36 (0.88)	0.17 (0.43)	0.25 (0.53)	0.13 (0.38)
Teasing content				
Affiliative	3.65 (1.51)	3.38 (1.40)	5.20 (1.23)	4.20 (1.66)
Critical	2.39 (1.75)	3.27 (1.53)	1.36 (1.07)	2.54 (1.48)
Teasing types				
Social norms	0.41 (0.68)	0.68 (0.65)	0.48 (0.67)	0.93 (10.79)
Character	0.24 (0.54)	0.11 (0.38)	0.32 (0.58)	0.42 (0.75)
Endearing names	0.39 (0.49)	0.09 (0.29)	0.40 (0.50)	0.36 (0.49)

Note. All variables are listed as means per tease. Standard deviations are in parentheses.

intuit, parents teased about social norm violations more frequently than did their children, $F(1, 40) = 5.60; p < .05$. More focused analyses showed that comparison children teased their parents about social norm violations more frequently than did HFA children, $t(38) = 2.15; p < .05$. Likewise, comparison group parents teased more frequently than parents of children in the HFA group about social norm violations, thus confirming predictions, $t(38) = 2.29; p < .05$.

Analyses of the actual teasing behavior of parents and children yielded results largely supportive of our hypotheses. When compared with appropriate comparison individuals, children in the HFA group and their parents were less playful and less critical in their teasing, and their teasing was less likely to focus on social norm violations. We now turn to analyses of participants' recounted experiences of teasing, which more specifically address possible differences in the awareness of social context—a critical part of understanding teasing.

Teasing Experiences

We expected comparison group participants to show a greater awareness of social context in their recounted teasing experiences. Using a mixed model ANOVA with group (HFA, comparison) as the between-participants factor and social context (antecedents, consequences) as the within-participants factor, we found that comparison children, in general, referred to the social context in their self-reported teasing experiences more frequently than did children with autism, $F(1, 40) = 12.07, p < .01$. As shown in Table II, comparison children referred to antecedents, $t(38) = 2.90; p < .05$, and consequences of teasing more frequently than did HFA children, $t(38) =$

2.15; $p < .05$. A similar analysis was conducted to examine parents' data. As with children, parents in the comparison group made more specific references to social context in teasing experiences than did parents in the HFA group, $F(1, 40) = 21.30, p < .01$. Comparison parents explicitly referred to both antecedents, $t(38) = 3.82; p < .01$, and consequences, $t(38) = 2.09; p < .05$, more frequently than did HFA parents.

In terms of the categories of teasing, children in both groups recalled, with equivalent frequency, teasing experiences related to character teasing, $t(38) = .60, ns$, and taunting, $t(38) = .59, ns$, (see Table II). As predicted, children in the comparison group reported more teasing experiences related to social norm violations than HFA group children, $t(38) = 3.01, p < .01$. HFA children reported experiences of teasing classified as trickery more frequently than comparison group children, $t(38) = 2.00, p < .05$. Parents of comparison children likewise recounted more instances of teasing about social norm violations than did parents of HFA children, $t(38) = 3.51, p < .01$. There were no group differences among parents for any other category of teasing.

Concepts of Teasing

Children

Our final interest was in the general content of participants' concepts of teasing, elicited when participants provided definitions of teasing. Regardless of group, among children, negative concepts occurred with greater frequency (89%) than positive concepts (11%)—a finding that one would expect from the developmental literature, which shows that children up through age 11 define teasing

Table II. Teasing Concepts and Recounted Teasing Experiences

	Children		Parents	
	HFA (N = 23)	Comparison (N = 20)	HFA (N = 23)	Comparison (N = 20)
Teasing concepts				
Positive	0.20 (0.41)	1.14 (1.01)	1.23 (1.03)	1.00 (0.86)
Negative	2.48 (1.43)	2.82 (0.29)	3.45 (2.57)	1.36 (0.73)
Social Context variables				
Antecedent	1.55 (1.20)	3.14 (1.59)	2.20 (1.58)	4.07 (0.96)
Consequences	1.65 (1.72)	2.85 (1.63)	3.60 (1.50)	4.78 (1.78)
Teasing types				
Social norms	0.10 (0.30)	1.64 (1.79)	0.48 (0.55)	1.54 (0.88)
Character	0.78 (1.00)	0.93 (0.98)	1.14 (0.97)	1.27 (1.04)
Taunting	0.63 (0.81)	0.71 (0.71)	0.81 (0.72)	0.88 (0.73)
Trickery	0.35 (0.58)	0.07 (0.26)	0.03 (0.09)	0.07 (0.15)

Note. Means of social context variables represent the average number of instances of each item per recounted teasing experience. Standard deviations are noted in parentheses.

largely in negative terms (Lightner et al., 2000; Warm, 1997). Children in the comparison group, however, offered positive concepts of teasing at a significantly greater frequency than did HFA group children, $t(38) = 3.15$, $p < .01$, consistent with our expectation. The two groups did not differ in terms of the frequency with which they defined teasing in negative fashion, $t(38) = 1.12$, *ns* (see Table II).

To ascertain that children with autism did not fail to express positive concepts of teasing simply because they are teased in more negative ways than comparison children, we examined the valence (positive or negative) of their recounted teasing experiences. Recall that recounted teasing experiences were coded as being either positive or negative in content valence, independent of the child's emotional evaluation of the experience. That is, it was possible for a tease to be coded as positive in content valence (e.g., breaking the curve on a test), even though the child experienced the tease as negative, and vice versa. For example, one child reported a tease that was negative in content valence (clumsily spilling milk at lunch) but found his friends' teasing to be funny and reported a positive experience. Codes referring to content valence are thus independent of children's interpretations of the teasing. We found that all children recalled more negative teasing experiences (84%) than positive teasing experiences (16%). There were no group differences in recounted teasing experiences classified as either positive in content valence or negative in content valence (*positive*: $M_{\text{control}} = 1.10(0.62)$, $M_{\text{HFA}} = .88(0.74)$, $t(38) = 1.36$, *ns*; *negative*: $M_{\text{control}} = 3.59(1.89)$, $M_{\text{HFA}} = 4.21(1.66)$, $t(38) = .82$, *ns*). Thus, HFA children do not appear to offer fewer positive concepts of teasing simply because they experience negative teasing more frequently.

Parents

Like their children, parents of HFA group participants offered more negative concepts of teasing than did parents of comparison children, $t(38) = 3.14$, $p < .01$. Interestingly, analyses revealed no group differences in parents' positive concepts of teasing, $t(38) = .44$, *ns*.

Linking Parents' and Children's Teasing

Taken together, the findings from the teasing interaction and interview suggest two themes: (1) that typically developing children and their parents appreciate the positive and playful aspects of teasing more so than do high-functioning children with autism and Asperger's syndrome and their parents, and (2) that they engage in

teasing that is more closely linked to the social context than do HFA group participants. How might parents' and children's teasing behaviors relate? We used a set of correlational analyses to explore this question.

Individuals' teasing styles and behaviors during interactions are thought to relate to one another (Keltner et al., 2001). We found this to be the case, at least among comparison participants. Critical content among children's and parents' nicknames was positively associated, $r = .69$; $p < .01$. Moreover, comparison children's affiliative content was negatively correlated with parents' critical content, $r = -.46$; $p < .05$, although parents were affiliative regardless of their children's critical, $r = .57$; $p < .05$, or affiliative content, $r = .53$; $p < .05$. Parents' critical behaviors tended to decrease as children's critical tease content increased, $r = -.38$; $p < .10$. Finally, children's playful behaviors were positively related to parents' critical behaviors, $r = .54$; $p < .05$. Thus, among comparison dyads, participants teasing styles appeared related.

The story was much different for the HFA children and their parents. Correlations between parents' and children's teasing behaviors suggested little reciprocity or interdependence in their teasing. No significant correlation between HFA children's teasing behaviors and those of their parents were found (see Table III).

Theory of Mind and Teasing Behavior

Might findings relate to children's theory of mind? Hierarchical multiple regression analyses addressed whether the group differences in children's references to social context and playful teasing behavior could be accounted for by differences in theory of mind. We used group as the dependent variable in each regression. Each analysis included only children's data, as we had not assessed parents' theory of mind skills.

Group differences in children's references to social context as they recounted teasing experiences were examined after controlling for theory of mind. At step 1, the variables age and verbal IQ were entered. As previously reported, no group differences emerged as this step ($\Delta R^2 = .07$; $F = 1.03$; *ns*). At Step 2, theory of mind scores were entered and were significantly associated with group status ($\Delta R^2 = .18$; $F = 6.03$; $p < .05$). At step 3, the frequency with which participants referenced social context during teasing interactions was entered. After accounting for theory of mind, teasing about social norms no longer differentiated participants by group ($\Delta R^2 = .01$; $F = .34$; *ns*).

The use of playful nonverbal behaviors during social interaction has been related to theory of mind

Table III. Teasing Behaviors Among Parents and Children

	Children's behaviors							
	Critical content		Affiliative content		Critical behavior		Playful behavior	
	HFA	Control	HFA	Control	HFA	Control	HFA	Control
Parent's behaviors								
Critical content	-.09	.69***	-.04	-.46**	.03	-.11	.05	.18
Affiliative content	.14	.57**	.04	.53**	-.04	.00	-.15	-.07
Critical behaviors	-.12	-.38*	.23	.27	.09	-.14	.05	.54**
Playful behaviors	-.18	-.07	-.11	-.27	-.09	-.25	-.15	-.20

Note. Data represent Pearson correlations between parents and their children.
 * $p < .10$. ** $p < .05$. *** $p < .01$.

(Charman, 1997). As above, in a three-step regression, age and verbal IQ did not differ across groups ($\Delta R^2 = .07$; $F = 1.03$; ns), though theory of mind ability did ($\Delta R^2 = .18$; $F = 6.03$; $p < .05$). As predicted, the group difference in children's use of playful behavior during teasing interactions disappeared when theory of mind was controlled ($\Delta R^2 = .02$; $F = .80$; ns). Differences in theory of mind then, appear to account for the use of playful actions while teasing and the topics about which children tease.

DISCUSSION

When high-functioning children with autism and their parents recalled prior episodes of teasing and engaged in a teasing interaction, they tended to neglect two crucial components of teasing: (1) the playful behaviors that mitigate the seriousness of a tease and (2) the idea that teasing is a social commentary about the behavior of another individual. This study highlights an interesting paradox in teasing. Although comparison group participants teased in more critical and moralistic ways, engaging in teasing about violations of social norms more frequently than did participants in the HFA group, their concepts of teasing were more positive and less negative than those of HFA participants. In contrast, the more affiliative teasers in the study, those in the HFA group, experienced more difficulty seeing the positive side of teasing.

Additionally, we found that during teasing, comparison participants were much more likely to show relatedness in their teasing styles, associating their levels of provocation and playfulness. These findings suggest that comparison group participants had more varied and adaptable concepts and styles of teasing. Finally, theory of mind accounted for differences between comparison children's and HFA children's use of playful behavior when teasing, as well as differences in teasing about social norms. Taken together, these findings corroborate prior research,

suggesting that theory of mind ability accounts for differences in spontaneous social behavior (e.g., Tager-Flusberg, 1999), and the understanding of social interaction (e.g., Baron-Cohen & Hammer, 1997).

Autism and the Absence of Play in Teasing

As predicted, HFA group participants used less playful behavior during teasing than did comparison participants and theory of mind accounted for these differences. There are several possible accounts of this finding. Related to theory of mind difficulties, children with autism and Asperger's syndrome engage in less play (Mundy et al., 1990). In addition, parents of children with autism and children with autism themselves use fewer nonverbal gestures in communication, have more difficulty producing communicative nonverbal gestures (Piven, Palmer, Jacobi, & Childress, 1997), and demonstrate a preference for highly literal communicative displays (Baron-Cohen & Hammer, 1997). These differences in the use of play and nonverbal communicative behavior may generalize to teasing, thereby accounting for our observed deficit in playful off-record markers.

Alternately, the HFA group participants teased in less critical fashion. The critical component of teasing, somewhat paradoxically, positively correlates with the increased use of off-record markers. It may be the case that HFA children and their parents did not tease in playful fashion because they teased in a more affiliation fashion and therefore had less critical content to render playful. Although our finding on the relationship between theory of mind and playful behavior lends plausibility to the former explanation, the methods utilized in the present study do not allow us to distinguish conclusively between them.

Autism and the Social-Moral Content of Teasing

References to group and social norms, and violations thereof: often comprise the major ground upon which a

tease is constructed (Eder, 1993). The teasing of HFA children and their parents lacked this social contextual richness. Relative to comparison participants, HFA group participants referred less frequently to antecedents and consequences in their recounted experiences of teasing. Additionally, their teasing centered less frequently on social norm violations. This pattern of results is quite consistent with previous studies that have documented the association between autism and deficits in social contextual understanding including diminished social-referencing behaviors, deficits in joint attention, and decreased use of communicative nonverbal behaviors (Capps & Sigman, 1996; Frith, 1989). Moreover, they have difficulty linking emotions to the social situations in which they occur (Capps, Yirmiya, & Sigman, 1992), and show deficient understanding of self-conscious emotions, in which another's social evaluation of the self plays a role (Heerey, Keltner & Capps, 2003).

The tendency for children with autism to ignore the antecedents and consequences of teasing, and its norm-related focus more generally, may help explain the anecdotal reports of the difficulty children with autism face in learning social norms and abiding by social rules (Klinger & Dawson, 2001). The present context, a friendly parent-child interaction, is likely quite dissimilar to the peer and sibling teasing most children experience. Nonetheless, this study suggests that teasing does not offer children with autism an arena for learning social norms, as it does for typically developing children.

In this vein, many of the high-functioning children with autism and Asperger's syndrome in our sample spontaneously reported that they did not know why people teased them and often did not even understand that they were being teased until they began to feel "bad." Whereas a number of comparison group children reported the experience of embarrassment as a consequence of teasing, only two HFA group children did so. Findings among parents paralleled those of their children, suggesting that parents of HFA children may also have difficulty spontaneously linking teasing with the social context. Finally, on the basis of teasing interviews, it appears that HFA children initiate teasing less frequently and may have fewer social relationships within which teasing is appropriate. Taken together, these findings suggest that comparison group members have a more thoroughly developed understanding of the functions of teasing in social context and of the ways in which teasing may relate to social relationships.

Teasing Concepts

Concepts of teasing are related to teasing experiences and both concepts and experiences progress with

social and linguistic development. As such development occurs, positive concepts of teasing begin to coexist with more negative ones, allowing individuals to recognize the benefits of teasing. The children in our study were just at the age when this developmental shift typically takes place (Warm, 1997). Accordingly, comparison children evidenced both positive and negative teasing concepts whereas the HFA group children had difficulty appreciating the more positive aspects. Parents' concepts mirrored those of their children. Both comparison and HFA group parents understood that teasing could be positive, however the teasing concepts of parents of HFA children were much more negative, suggesting that although they conceptually understand that teasing has positive side, they appear to interpret it more negatively.

CONCLUSION

In teasing one another, people learn about social norms, roles, and expectations. They express affection and explore possible relationships. They discover the preferences, attitudes, and beliefs of others. Theory of mind and the ability to understand social intentions underpin teasing and much of the social discourse in which humans engage, an idea illustrated in the coemergence of early teasing and theory of mind in young children (e.g., Dunn & Munn, 1985). Our findings hint at the difficulty faced by children with autism and Asperger's syndrome as they try to navigate social relationships and fit into their social environments. Unfortunately, these difficulties are not unique to autism spectrum disorders. On the basis of the abilities necessary to understand teasing we would predict that teasing difficulties would extend to any individuals who experience difficulty with theory of mind-related skills, such as children with attention deficit hyperactivity disorder (Hinshaw, 1987). Because these difficulties are so characteristic of children with autism, the fundamental social interaction of teasing may elude even the best efforts of these children, despite their labors to understand it.

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