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EMPIRICAL ARTICLE



Talking about Personality: Evidence for Attributions to Self and Others in Early Childhood

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ABSTRACT

The early use of person perception terms was examined via an analysis of the spontaneous speech of four young children in conversation with their parents at home. All four children were producing such terms early in their third year. Like their parents, children used the terms in two distinguishable ways: to attribute a trait to a person or to characterize a person's ongoing action. Most of these terms were evaluative, whether positive or negative. Parents often made direct comments to their children about both their traits and ongoing actions; children made similar comments about themselves. Parents also used person perception terms to make comments about others who were not party to the conversation; children did likewise. A considerable proportion of the trait terms that children produced served as interpretive comments on someone's actions or preferences. Our findings suggest that from an early age, children are trait theorists. Not only do they describe ongoing actions using trait vocabulary, they interpret those ongoing actions by attributing traits.

The impressions we form of other people shape our subsequent attitudes and behavior toward them (Rholes & Ruble, 1984). The process by which these impressions are formed is known as *person perception*, and often occurs naturally, even automatically (Asch, 1946; Gilbert, 1998). Person perception typically involves the inference of personality traits; that is, personality traits serve as key building blocks from which an impression of an unfamiliar person can be constructed. By observing or hearing about people's actions, we can infer personality traits about them (Ambady & Rosenthal, 1992; Carlston & Skowronski, 1994; Jones, 1979). Given the strength of these formed impressions (Todorov & Uleman, 2002) and the impact they have on our social interactions, the present study examines the emergence of person perception in the linguistic environment of toddlers and preschool children. Specifically, we ask how young children learn to talk about personality traits in conversations with their parents.

Person perception in young children

Relative to older children and adults, preschool children are less inclined to attend to a person's psychological characteristics (Livesley & Bromley, 1973), less able to make

spontaneous trait inferences (Snodgrass, 1976), and less consistent in anticipating future behaviors based on inferred trait labels (Rholes & Ruble, 1984). Even when preschoolers make trait inferences, they often need more behavioral exemplars as compared to older children (Boseovski & Lee, 2006). Similarly, elementary school children require more behavioral information when inferring traits than do adults (Aloise, 1993).

Nevertheless, by six months, infants can make social evaluations, demonstrating a preference for a character that helped someone up a hill over a character that prevented someone from climbing up the same hill (Hamlin, Wynn, & Bloom, 2007). In addition, preschool children can infer certain personality traits, such as *nice* and *mean*, from behavioral descriptions (Liu, Gelman, & Wellman, 2007), and subsequently use those inferred trait labels to make predictions about behavior (Chen, Corriveau, & Harris, 2016; Liu et al., 2007) and mental states (Heyman & Gelman, 1999). Moreover, children can easily infer trait information from a few behavioral instances if the implied trait information is positive, rather than negative, in nature (Boseovski & Lee, 2008), suggesting that apparent inconsistencies in children's person perception may be due to their attention to the valence of trait information presented to them.

The present study

Building on the previous literature, we investigated the development of person perception in young children. As with prior work (Chen et al., 2016; Liu et al., 2007), we focused on children from two to five years of age. However, rather than examining the development of person perception through an experimental design, which may provide limited insight into the full range of young children's competence (Bartsch & Wellman, 1995), we analyzed the emergence of children's trait attribution through naturally-occurring conversations.

Investigations of children's conversations have revealed that, even before entering kindergarten, two-year-old children talk about internal states. Thus, they talk about certain personality traits (e.g., *nice*; Bretherton & Beeghly, 1982), as well as mental states such as desires (Wellman & Woolley, 1990), emotions (Wellman, Harris, Banerjee, & Sinclair, 1995), and knowledge (Harris, Yang, & Cui, 2017). Indeed, children's conversations with their parents are associated with their understanding of mental states such as beliefs and emotions (Harris, de Rosnay, & Pons, 2005) and with their ability to make trait-based evaluations on their own (Wang, Doan, & Song, 2010). More recently, scholars have hypothesized that young children's conceptualization of emotions is shaped by the emotion-related words and labels provided by their parents and caregivers (Hoemann, Xu, & Barrett, 2019). In sum, language – particularly the language that is produced naturally in the context of conversations between a child and caregiver – is likely to play a crucial role in the development of children's understanding of internal and mental states.

Accordingly, we focused on natural language conversations that have been recorded longitudinally and stored in the Child Language Data Exchange System (CHILDES; MacWhinney & Snow, 1985, 1990). Past research has successfully used this database as a window into the emergence of children's social-cognitive abilities. More specifically, it has been used to gain insights into children's understanding of mental states (Bartsch & Wellman, 1995; Harris et al., 2017; Wellman, Phillips, & Rodriguez, 2000) including emotions (Wellman et al., 1995), into their information-seeking conversations with

primary caregivers (Chouinard, 2007; Kurkul & Corriveau, 2018), and into their understanding of their own learning processes (Sobel, Li, & Corriveau, 2007). Through a careful examination of the transcripts taken from select children – not only with respect to when trait labels begin to emerge in conversations, but also the context in which these terms emerge – we sought to resolve basic questions regarding the early development of person perception capabilities. Specifically, we asked about the overall frequency with which adults, especially parents, produce trait terms, the particular trait terms that adults use, and the contexts in which they use them. We then asked how far children display a similar pattern of production.

As described in more detail in the presentation of the findings, we found that both adults and children use trait terms not only to refer to the characteristics of a given person but also to describe a person's ongoing activities. For example, they might describe someone as engaged in doing something *silly*, *smart*, or *funny*. Rather than exclude these usages on the grounds that they did not describe a person's traits, we probed whether such descriptions of activities might precede the attribution of traits to persons. Thus, we explored whether children begin by describing a person's actions as, for example, *smart* or *funny*, and then eventually go on to describe individuals – rather than their actions – as *smart* or *funny*.

We examined transcripts from four children to identify when and how they acquired the appropriate language to express their impressions as well as how easily they could infer personality traits and label people with these trait terms. Based on the previous literature, we expected that children's exposure to trait terms by their parents and other adults would occur at an early age, and that children's production of such trait terms would emerge concurrently with, or soon after, their exposure to those terms.

We explored four speculative hypotheses. First, as noted above, we anticipated that adults, given their relative familiarity with the role that behaviors play in trait inference (Aloise, 1993; Boseovski & Lee, 2006), might be more inclined to use trait terms to describe behaviors, activities, and situations related to the target person or entity, rather than to attribute traits directly to the target. We anticipated that children might echo this adult pattern, i.e., they might initially use trait terms to describe the ongoing behavior of a person (e.g., describing a person's actions as *funny* or *silly*) and then use them to pick out a person's individual characteristics.

Second, we examined the relative frequency with which children and their parents produced terms falling into particular categories. In line with the findings of recent experimental studies (e.g., Chen et al., 2016), we predicted that children's initial usage would be dominated by the production of evaluative terms such as *good*, *nice*, *bad*, and *mean*.

Third, we asked which individuals were the targets of trait attributions. That is, we asked how often attributions were made to the child, to his or her parents, or to other individuals. In a complementary analysis, we examined the conversational role played by these targeted individuals. Thus, we examined the relative frequency with which speakers – both parents and their children – made attributions to the self (e.g., “*I'm funny*”), to an interlocutor (e.g., “*You're so nice*”), or to a third party (e.g., “*He's mean*”). In line with the findings of Harris et al. (2017) regarding the attribution of the mental state of knowing, we speculated that most attributions would be to the self or to an interlocutor rather than to a third party.

Finally, we asked how often children produce trait terms not just to describe a person with no further elaboration but to interpret a person's behavior. Thus, we identified those

occasions when children produced a trait term that could be viewed as an interpretive comment on some aspect of a person's actions or preferences mentioned in the ongoing conversation. Such interpretive usages would imply that children conceive of traits as internal states or dispositions that can be used not just to describe a person's overt behavior but also to account for it.

Method

Participants

To select our children, we initially referenced those examined by Bartsch and Wellman (1995; see the description of the 10 children on pp. 23–24) and reviewed the transcripts available in the CHILDES English – North American Corpora (CHILDES English-NA-MOR Corpora, n.d.) to ensure that all potential English-speaking children were considered. We selected children who were comparable in age range – approximately 2 years to 5 years of age, consistent with the age range at which person perception has been found to emerge (Liu et al., 2007). Finally, we opted to have an equal number of boys and girls for the study. In the end, the transcripts of four children, two boys and two girls, were included. Abe (see Kuczaj & Maratsos, 1975, 1983) was a firstborn, European-American child from a graduate-student family whose conversations were recorded from when he was 2;4 years to 5;0 years of age. Adam (see Brown, 1973) was a firstborn, African-American child from a middle-class family. Both of his parents had college degrees, and his father worked as a minister; his conversations were recorded from when he was 2;3 years to 5;2 years of age. Sarah (see Brown, 1973) was a firstborn European-American child from a working-class family whose father worked as clerk; both of her parents had high school degrees. Her conversations were recorded from 2;3 years to 5;1 years of age. Finally, Naomi was a firstborn, European-American child from an academic family whose mother was a faculty member at a U.S. university (see Sachs, 1983); her conversations were recorded from 1;2 years to 4;9 years of age.

Materials

In total, 497 transcripts of adult-child conversations were drawn from the CHILDES database (MacWhinney & Snow, 1985, 1990). Nearly all recordings came from children's everyday interactions with caregivers (i.e., their parents) at home. Transcripts associated with Abe (210 transcripts; see Kuczaj & Maratsos, 1975, 1983) came from two 30-minute recordings each week between the ages of 2;4 to 4;1; one 30-minute session was recorded per week from 4;1 to 5;0. Transcripts associated with Adam (55 transcripts) from ages 2;3 to 5;2 and Sarah (139 transcripts) from ages 2;3 to 5;1, came from recordings in the Brown corpus (see Brown, 1973). For Adam, recordings took place for 2 hours every other week; for Sarah, recordings took place for 30 minutes every week. Transcripts associated with Naomi (93 transcripts; see Sachs, 1983), came from recordings from ages 1;2 to 4;9. The majority of the recording sessions (80 transcripts) took place from 1;2 to 3;0 years, with thirteen more transcripts made from 3;2 to 4;9 years of age.

Procedure

We reviewed the transcripts in two phases: a *line coding* phase and a *term searching* phase. Each of these phases is described in more detail below.

Line coding phase

The *line coding phase* was used to compile a set of potential trait terms. We started by randomly selecting 42 transcripts (20%) from one of the corpora (Abe). Two research assistants checked for all terms marked as “adj” (for adjectives) in the CHILDES database. Additional terms that could also be considered adjectives were also identified. The same two assistants then independently reviewed the 1791 identified adjectives (1351 “adj” and 440 additional adjectives identified) from the transcripts and the context in which the adjective appeared (i.e., the three lines prior to, and following, the line containing the identified adjective) to determine whether the term was used to indicate a trait. Inter-rater reliability was high (agreement = 95.43%, Cohen’s kappa = .83), indicating high agreement (Landis & Koch, 1977); disagreements between the two research assistants were resolved through discussion. Adjectives that appeared more than ten times across the transcripts were noted, yielding a list of ten trait labels (based on the adjectival terms that explicitly referred to a person, character, or personified object at least 4 times out of the total number of appearances across transcripts): *good*, *bad*, *nice*, *mean*, *smart*, *silly*, *quiet*, *careful*, *funny*, and *friendly*.

Term searching phase

In the subsequent *term searching phase*, research assistants searched for words that could be classified under each of the ten trait labels in the remaining 455 transcripts across the four corpora. For example, the words *better* and *best* were classified under the trait label *good*. For each identified word, we determined the *target* from the context (i.e., the person, fictional character, or personified object that the term was describing). Based on how the identified word was used in relation to the target, it was then classified as a *trait term*, an *action description term*, or *neither trait term nor action description*.

As shown below, *trait terms* were terms that directly described the target (either a person or personified entity), rather than an ongoing action or potential action of the target:

- (1) MOTHER: *he’s a **mean** pirate.* (Abe: 030419a.cha, line 825)
- (2) MOTHER: *because you’re so **nice** and thoughtful.* (Abe: 030619.cha, line 736)
- (3) CHILD: *mommy’s **funny**.* (Abe: 020829.cha, line 1073)

Action description (AD) terms described ongoing or potential actions, behaviors, or thought processes of the target, as shown below:

- (4) MOTHER: *well if you’re gonna be **mean**.* (Abe: 030419a.cha, line 948)
- (5) MOTHER: *will you teach him how to be **nice**?* (Abe: 030308.cha, line 447)
- (6) MOTHER: *I think you were trying to be **funny**.* (Abe: 020901.cha, line 507)

Terms used neither as trait terms nor as AD terms were excluded from subsequent analyses:

- (7) MOTHER: *oh that would be a really **nice** book to get if we could ever find it.* (Abe: 020704.cha, line 614)

For each corpus, the trait and AD terms were sorted as they were being searched into the ten labels so that the frequency of the terms within each label could be measured. Two research assistants (one research assistant from the line coding phase, and another blind to the hypotheses of the study) independently coded all of Adam and Naomi's transcripts (30% of the total transcripts) for three randomly selected labels (*bad*, *smart*, *silly*), reaching 93.24% agreement (Cohen's kappa = .85). Differences were resolved through discussion.

After coding the trait and AD terms (together, *person perception terms*), we explored the targets of each term. First, we examined the individual identity of the target, e.g., target child, mother, father, or animal (see Table 1 for the full set of target categories). Second, we examined the conversational role of the target, notably whether the person perception term targeted the speakers themselves, their interlocutors, or a third party who was not part of the conversation. Two research assistants blind to the hypotheses of the study independently categorized the targets from all of Adam and Naomi's transcripts (30% of the total transcripts) for three randomly selected labels (*good*, *bad*, *nice*). Agreement was extremely high, both for (a) the identity of the target (agreement = 99.32%, Cohen's kappa = .99) and (b) the conversational role of the target (agreement = 98.19%, Cohen's kappa = .97). Finally, as described in more detail below, we identified all occasions when a person perception term was used in an interpretive fashion.

Results

Our initial search yielded 6682 possible person perception terms; after reviewing the context for each term, 3744 terms were eliminated, resulting in a total of 2938 person perception terms across the ten trait labels. Of these, 38% (1131 terms) were classified as trait terms and 62% (1807 terms) were classified as AD terms. Because few of the terms were produced by other adults (9.67%) or other children (0.44%), the following analyses were based on parents and target children only; together, they produced a total of 2641 person perception terms. Of these, 40% (1062 terms; 608 from the target children, 454 from their parents) were classified as trait terms and 60% (1579 terms; 429 from the children, 1150 from the parents) were classified as AD terms.

Below, we present detailed analyses of these person perception terms in five sections. We compare the frequency and onset of trait terms as compared to AD terms. Second, we consider the age at which children hear and produce person perception terms and trace their developmental progression. Third, we examine the frequency of the terms falling

Table 1. Target categories of the person perception terms.

Target category	Description
<i>Target child</i>	Trait/action description term is referring to the target child (Abe, Adam, Sarah, and Naomi)
<i>Mother (of target child)</i>	Trait/action description term is referring to the mother of the target child
<i>Father (of target child)</i>	Trait/action description term is referring to the father of the target child
<i>Other person</i>	Trait/action description term is referring to a person (adult, child, or fictional character) other than the target child, mother, or father
<i>Animal</i>	Trait/action description term is referring to an animal
<i>Nonliving entity</i>	Trait/action description term is referring to a personified nonliving entity (e.g., the term is used to describe the floor after the child fell)
<i>Situation</i>	Trait/action description term is referring to a situation (e.g., the term is included in the lyrics of a song)

under each of ten labels, and the extent to which children and their parents engaged in positive and negative evaluations. Fourth, we describe the targets of the person perception terms. Finally, we examine the frequency with which children offered an interpretation of someone's action or utterance when they produced a trait term.

Frequency and onset of person perception terms

A Chi-square test of independence revealed that the relationship between speaker type (parents, children) and term categorization (trait, AD) was highly significant, $\chi^2(1, N = 2641 \text{ terms}) = 240.93, p < .001$, with parents producing relatively more AD terms and children producing relatively more trait terms. The breakdown between the proportion of trait terms and AD terms for the individual target children's parents and the equivalent breakdown for the individual children were examined further and are presented in Figure 1a and b, respectively. Inspection of Figure 1a confirms that parents consistently produced more AD terms (Abe: 72%; Adam: 77%; Sarah: 64%; Naomi: 79%) than trait terms (Abe: 28%; Adam: 23%; Sarah: 36%; Naomi: 21%). By contrast, inspection of Figure 1b confirms that children consistently produced more trait terms (Abe: 56%; Adam: 54%; Sarah: 69%; Naomi: 61%) than AD terms (Abe: 44%; Adam: 46%; Sarah: 31%; Naomi: 39%).

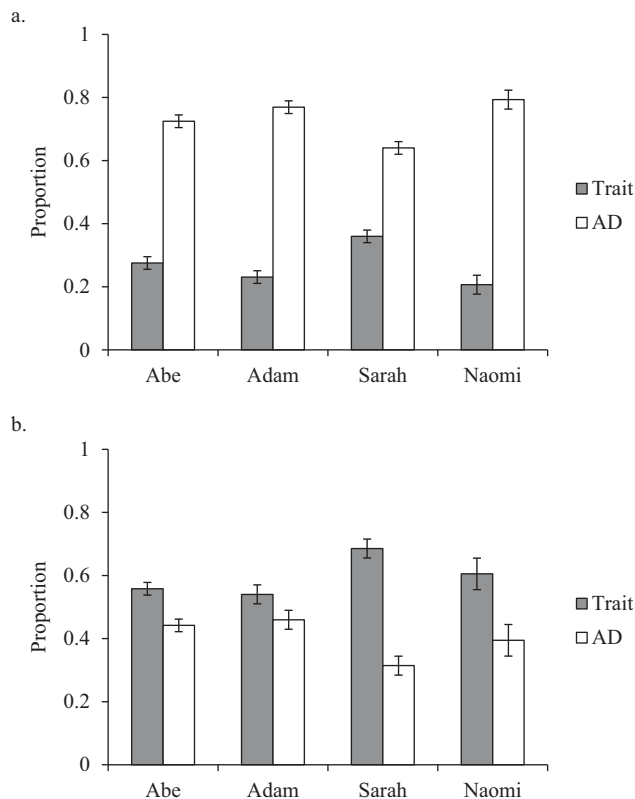


Figure 1. Proportions of person perception terms categorized as trait and AD terms separately by corpus for parents (a) and for target children (b).

Person perception term exposure and production over time

We identified the age at which the first three trait and AD terms were produced by both parents (i.e., children's *exposure* to these terms) and by children (i.e., their *production* of these terms) within each corpus; see Table 2 for a complete summary of the results. Inspection of Table 2 reveals that children were exposed to and produced person perception terms in the earliest transcripts available. Thus, exposure to person perception terms appeared in the earliest transcripts available for Abe, Adam, and Sarah (2;4, 2;3, 2;3 years of age respectively), and slightly earlier for Naomi at 1;6 years of age. Children first produced person perception terms in the earliest transcripts available for Abe, Adam, and Sarah (2;4, 2;3, 2;3 years respectively); in Naomi's transcript, these terms appeared at 1;8 years. Thus, children's exposure to and production of person perception terms occurred before they reached three years of age (and in Naomi's case, before two years of age). Moreover, inspection of Table 2 shows that children produced person perception terms not just to describe the behaviors of the person or entity but also to attribute these terms to a person or entity. Thus, contrary to our hypothesis, there was no indication of an early period in which children's production was confined to AD terms.

Given the similarities in the exposure to and production of person perception terms across the four children, subsequent analyses were conducted after collapsing data from the four corpora. The relative proportions of trait and AD terms heard (Figure 2a) and produced (Figure 2b) were examined across the three 15-month increments. In terms of children's exposure to the person perception terms of their parents, a Chi-square test of independence revealed that the relationship between age (1;6–2;8 years, 2;9–3;11 years, 4;0–5;2 years) and term categorization (trait, AD) was significant, $\chi^2(2, N = 1604 \text{ terms}) = 7.03, p = .03$, indicating that the bias to AD for the person perception terms produced by parents increased with age. Figure 2a confirms that children consistently heard more AD terms than trait terms and that this bias increased with age.

A Chi-square test for children's production showed that the relationship between age and term categorization was significant, $\chi^2(2, N = 1037 \text{ terms}) = 19.26, p < .001$. Figure 2b indicates that children produced more trait than AD terms early on but by the latest 15-month period (4;0–5;2 years) this bias had disappeared. Thus, with age, children's pattern of production became more similar to the pattern of exposure from their parents.

Table 2. Age at which the first three trait and action description terms were produced by parents and by children within each corpus.

Speaker Type	Person Perception Term	Usage	Abe	Adam	Sarah	Naomi
Children	Trait	1 st usage	2;4 (<i>nice</i>)	2;3 (<i>funny</i>)	2;3 (<i>nice</i>)	1;8 (<i>bad</i>)
		2 nd usage	2;5 (<i>funny</i>)	2;3 (<i>funny</i>)	2;3 (<i>bad</i>)	1;10 (<i>good</i>)
		3 rd usage	2;5 (<i>funny</i>)	2;3 (<i>funny</i>)	2;3 (<i>bad</i>)	1;10 (<i>good</i>)
	Action Description	1 st usage	2;5 (<i>good</i>)	2;3 (<i>funny</i>)	2;10 (<i>good</i>)	1;9 (<i>careful</i>)
		2 nd usage	2;6 (<i>nice</i>)	2;3 (<i>careful</i>)	2;11 (<i>nice</i>)	1;9 (<i>careful</i>)
		3 rd usage	2;7 (<i>funny</i>)	2;3 (<i>funny</i>)	3;1 (<i>funny</i>)	1;10 (<i>bad</i>)
Parents	Trait	1 st usage	2;5 (<i>good</i>)	2;3 (<i>nice</i>)	2;3 (<i>good</i>)	1;6 (<i>good</i>)
		2 nd usage	2;5 (<i>good</i>)	2;3 (<i>smart</i>)	2;3 (<i>good</i>)	1;6 (<i>good</i>)
		3 rd usage	2;5 (<i>funny</i>)	2;3 (<i>funny</i>)	2;3 (<i>nice</i>)	1;8 (<i>bad</i>)
	Action Description	1 st usage	2;4 (<i>good</i>)	2;3 (<i>good</i>)	2;3 (<i>nice</i>)	1;6 (<i>good</i>)
		2 nd usage	2;5 (<i>careful</i>)	2;3 (<i>funny</i>)	2;3 (<i>bad</i>)	1;6 (<i>good</i>)
		3 rd usage	2;5 (<i>funny</i>)	2;3 (<i>funny</i>)	2;3 (<i>nice</i>)	1;6 (<i>careful</i>)

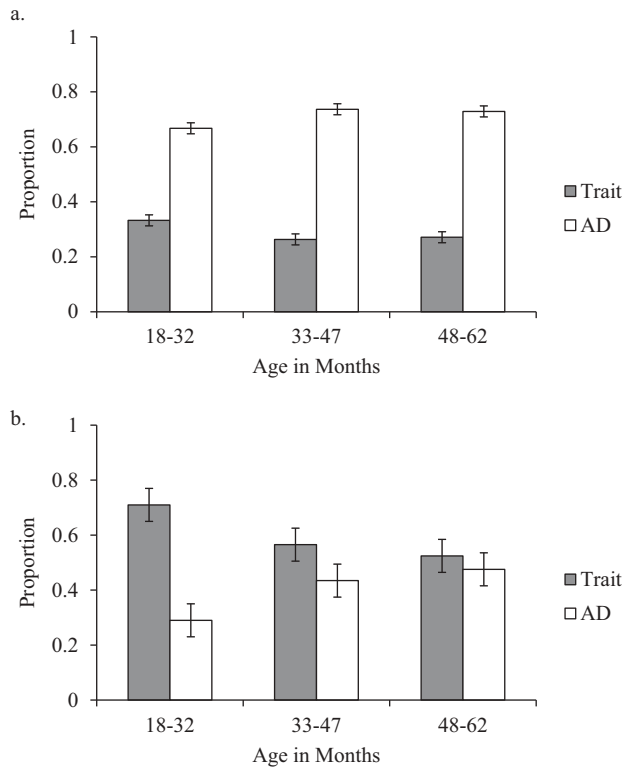


Figure 2. Proportions of trait and AD terms exposed to children by their parents (a) and produced by children (b) across age (in 15-month increments).

To summarize, children heard more AD terms than trait terms, but produced more trait terms than AD terms. Both types of usage (trait, AD) were observed in children's early transcripts. Children were consistently, and increasingly, exposed to more AD terms than trait terms; by contrast, children produced more trait terms compared to AD terms early on, but this bias diminished with age as children shifted to a more adult-like pattern.

Frequency of person perception terms by trait label

Recall that there were ten trait labels: *good*, *careful*, *nice*, *funny*, *bad*, *silly*, *mean*, *smart*, *quiet*, and *friendly*. Figure 3a and b present the proportion of trait and AD terms produced for each label in terms of exposure and production, respectively. Inspection of Figure 3a reveals that the person perception terms that children heard from their parents were dominated by three labels – *good* (37.66% of the person perception terms heard), *careful* (19.51%) and *nice* (15.46%). Moreover, Figures 1a and 2a show that with respect to these terms, children heard more AD than trait terms. By contrast, among the remaining seven labels, trait terms and AD terms were heard with approximately equal frequency. Inspection of Figure 3b reveals that children, like their parents, produced terms associated with the *good* label most often (25.36% of the terms they used), typically as an AD term (57.79% of the *good* terms produced) rather

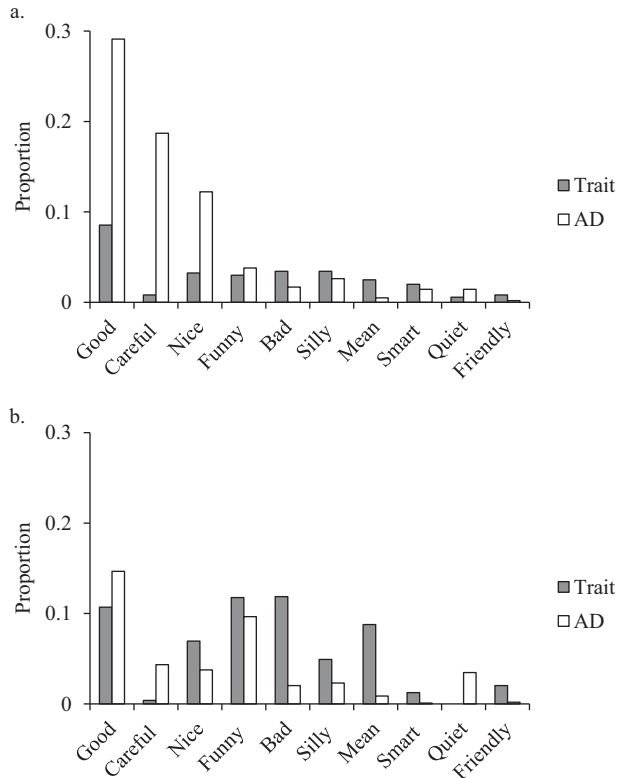


Figure 3. Proportions of trait and AD terms for each of the 10 trait labels in terms of exposure (a) and production (b). Proportions were calculated by dividing the number of trait or AD terms for each label by the total number of person perception terms heard or produced by the children.

than a trait term (42.21% of the *good* terms). However, in line with [Figures 1b](#) and [2b](#), children tended to produce more trait than AD terms overall.

Next, we asked if the preceding patterns of exposure and production – particularly, the developmental shift in the relative proportion of trait and AD term production by children – were driven by the usage of terms for select labels. We focused on the trait labels *nice*, *good*, *mean*, and *bad*, because these labels: (a) were evaluative in nature; (b) represented some of the most commonly studied person perception terms (Boseovski & Lee, 2006; Bretherton & Beeghly, 1982; Chen et al., 2016); (c) appeared early in the four corpora; and (d) if counted together, constituted the majority (60.58%) of the terms produced. We combined the labels *nice* and *good* to produce a *positive* valence category, and *mean* and *bad* to produce a *negative* valence category.

[Figure 4a](#) and [b](#) display respectively the proportion of positive and negative person perception terms for children’s exposure and production. Inspection of [Figure 4a](#) shows that across all three age periods, children were exposed to proportionately more AD than trait terms in the positive valence category but to proportionately more trait than AD terms in the negative valence category. Thus, the predominance of AD over trait terms in parental input (see [Figure 2a](#)) can be plausibly attributed to the predominance of positive terms in parents’ input. With respect to parents’ production of negative terms, the predominance of AD terms is reversed.

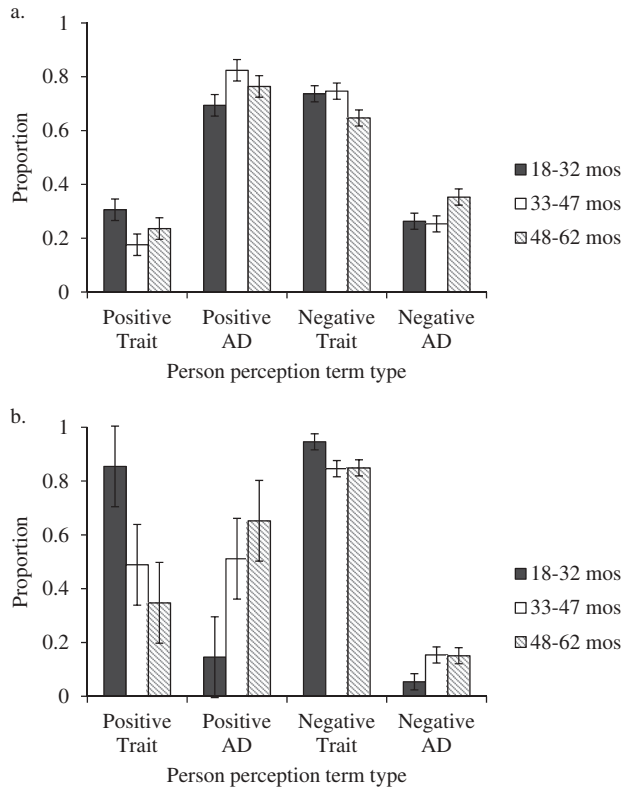


Figure 4. Proportions of trait and AD term exposure (a) and production (b) for positive and negative person perception terms across age, in 15-month increments.

Inspection of [Figure 4b](#) shows that for the negative valence category, children resemble their parents in producing more trait than AD terms. By contrast, for the positive valence category, there is a marked shift with age. A Chi-square test confirmed that there was a significant relationship between age and term categorization (trait vs. AD), $\chi^2(2, N = 374) = 40.71, p < .001$, with older children displaying the adult bias toward AD terms.

In summary, as expected, the person perception terms heard and produced by the target children were largely evaluative, and mostly positive. The age-related trends shown for the positive terms mirrored those for children's overall person perception term usage. These trends were not observed for the negative evaluative term category, in which both parents and children consistently produced more trait over AD terms. Thus, although children are exposed to a great amount of evaluative information from their parents at a young age, they are especially likely to learn about positive evaluation rather than negative evaluation and to increasingly adopt the parental bias toward AD rather than trait terms.

Target characteristics of person perception terms

For our third question, we examined which particular individuals (or entities) were the targets, grouping these targets into seven categories: (a) *target child*, (b) *mother*, (c) *father*, (d) *other person* (i.e., person other than the target child or the child's parents), (e) *animal*,

(f) *nonliving entity*, and (g) *situation* (e.g., a situation in which the target child was engaged). The targets of a small number of person perception terms (34 out of a total of 2641) straddled two categories, which resulted in an additional 34 targets, for a total of 2675 targets.

The target categories identified and the proportion of targets that fell within each category are shown in Figure 5a and b. Overall, the main focus of the 2675 person perception terms – trait and AD terms – was the target child (59.63%). This bias was evident for the 1618 utterances children heard (75.09%) and for the 1057 utterances they produced (35.95%). The next most frequent targets were other persons, animals, and nonliving entities; relatively few references were made to targets in the remaining categories, including mother and father.

We also examined the conversation role of the target in the speaker's utterance. Thus, speakers were classified as referring to themselves, to their interlocutor, or to a third party. Parents most often referred to their interlocutors, then to third parties, and rarely to themselves (see Figure 6a). Further examination showed that when parents were referring to their interlocutor, they were mostly referring to the target child (for Abe: 99.71% of the 343 terms referred to the interlocutor; for Adam: 99.31% of the 289 terms; for Sarah: 95.48% of the 376 terms; for Naomi: 98.97% of the 195 terms). In sum, the terms to which children were exposed were mostly addressed to them and about them.

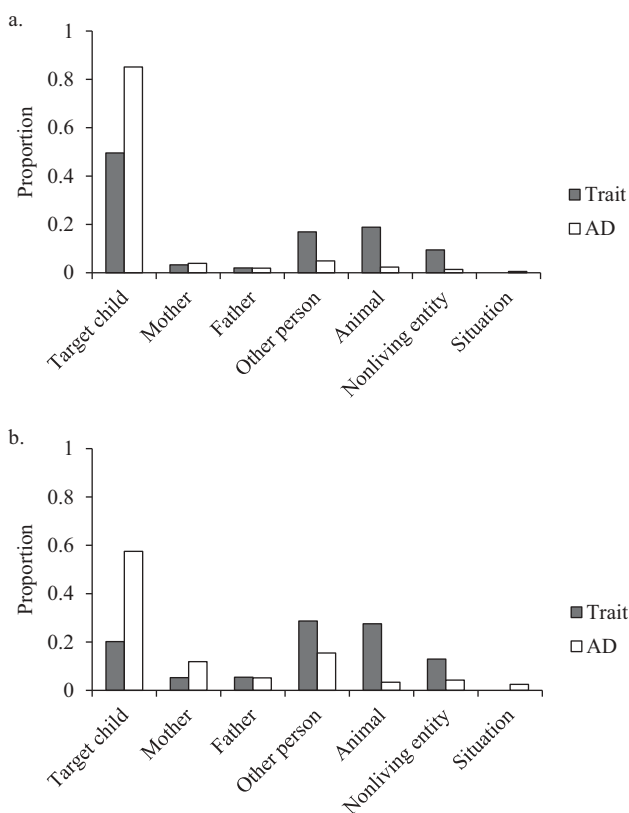


Figure 5. Target categories of trait and AD terms by exposure (a) and production (b).

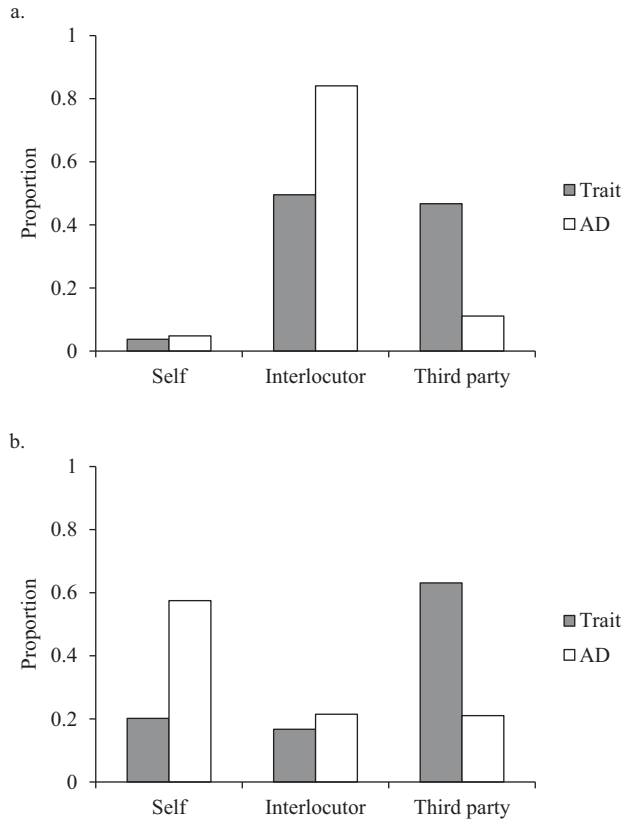


Figure 6. Proportion of references to self, the interlocutor, or a third party by children's parents (a) and by children themselves (b). Proportions were calculated by dividing the number of trait or AD terms that fell into each reference category by the number of trait or AD terms from term exposure (a) or production (b).

In their production, by contrast, children often referred to themselves or third parties, but rarely to interlocutors (see [Figure 6b](#)). However, the distribution varied with the type of term. Among the 447 AD terms children produced, the majority (57.49%) referred to themselves but among the 610 trait terms, only 20.16% referred to themselves; most trait references were to third parties (63.11%), (i.e., to other people and animals).

Overall, [Figure 6a](#) and [b](#) reveal that children were likely to hear themselves being described, especially with AD terms. In addition, they often described themselves with AD terms. When children used trait terms, they mostly referred neither to themselves nor their interlocutors but to third parties who were not part of the conversation.

Interpretive usages among person perception terms

On some occasions, children used trait terms in an explanatory rather than a purely descriptive fashion. Thus, although children often used AD terms to describe a behavior observed in a single instance, they also produced trait terms as an apparent explanation for a target's action or preference in the course of the conversation. We referred to such

trait usages as *interpretive usages*. To analyze these usages in more detail, we identified all instances in which a child interpreted an action or preference mentioned either by the target child or by the child's interlocutor. More specifically, we identified all instances in which the child provided a trait-based interpretation of a person's action or preference as described by the child in the three lines preceding or following the line with the trait term. In the following instance, Sarah first describes the behavior (i.e., biting) of a dog before characterizing the animal (i.e., *bad*):

(8) SARAH (2;4 years): *bite me*.
 SARAH'S MOTHER: *he bite you?*
 MOTHER: *aw*.
 SARAH: *bad. bad doggie*.
 (020410.cha, lines 1658-1661)

We also identified all instances in which the child provided a trait-based explanation of a person's action or preference as described by the interlocutor in the three lines preceding the line containing the trait term. For instance:

(9) ABE'S MOTHER (at 3;2 years): *Paul's the one who broke him. Abe*.
 ABE: *why?*
 MOTHER: *he just didn't know his own strength*.
 ABE: *he's so mean*.
 (abe076.cha, lines 129-132)

Note that we did not include instances in which the action or preference was described by the interlocutor in the lines following the target line in order to be confident that children were making the explanatory link and not just their interlocutors. The lead author and a research assistant unfamiliar with the study premise coded all 221 trait usages in Abe's transcripts (approximately 36% of all trait usages across the four children); inter-rater reliability was high (agreement = 96.83%, Cohen's kappa = .93); disagreements were resolved through discussion.

Such interpretive usages amounted to a considerable percentage of the overall number of trait terms produced by each child (Adam: 23%; Abe: 42%; Naomi: 32%; Sarah: 34%). Moreover, inspection of [Figure 7](#) shows that interpretive usage was not confined to a small number of frequently used labels but extended to nine of the ten labels. Indeed, a correlational analysis (i.e., Spearman's rho) confirmed that the number of trait terms produced across the 10 labels was highly correlated with the number of interpretive usages, $r_s = .95$, $p < .01$. Thus, the more terms children produced for a particular trait category, the more likely they were to produce interpretive usages as well. By contrast, there was no correlation between children's production of interpretive usages and their production of AD terms, $r_s = .02$, $p = .96$.

In sum, children's tendency to use trait terms in an interpretive fashion was a broad strategy rather than a local elaboration confined to a small number of categories. The frequency with which they used any given trait term in an interpretive fashion was proportional to the frequency with which children produced that trait term.

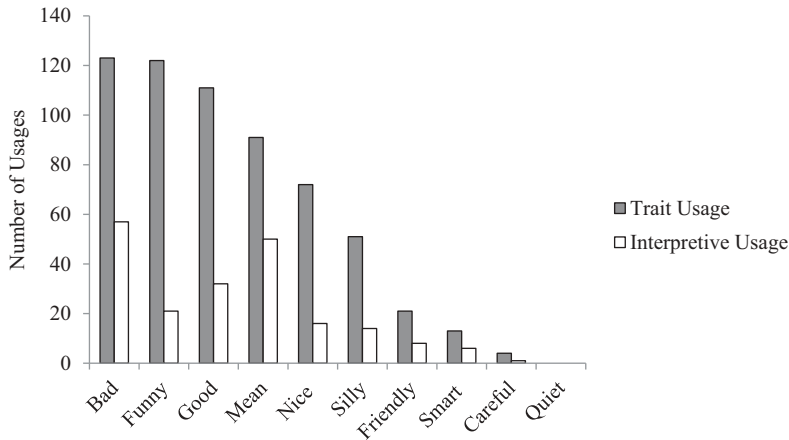


Figure 7. Total number of trait and interpretive usages produced by the target children.

Discussion

We explored the person perception terms that young children heard and produced in the context of naturally occurring parent-child conversations. Below, we review the key findings before turning to implications and explanations.

Our first question concerned the development of children's exposure to, and production of, person perception terms. Such terms emerged very early on, both among parents and among children. Thus, three of the children were using such terms when the recording of their utterances started (i.e., at 2;3 and 2;4 years) and Naomi, for whom recording began at 1;2 years, used such terms when she was 1;8 years of age. Not surprisingly, children were being exposed to person perception terms concurrently. Closer inspection of the utterances that children heard and produced revealed two different types of usage: trait and AD. In the former case, the term was used to describe a trait and was attributed to the person, whereas in the latter case the term was used to describe an ongoing, situation-specific behavior rather than offering a characterization of the person engaging in that behavior. We found that, regardless of their age, children heard their parents produce person perception terms to refer to situation-specific behaviors – which we labeled AD terms – more often than trait terms. Contrary to our tentative expectation, children did not initially confine themselves to AD usages. Indeed, early in development, they produced more trait terms than AD terms. However, with age children's pattern of production increasingly resembled that of their parents, in that AD usage became as frequent as trait usage.

Further examination of the AD and trait terms by individual items confirmed, as expected, that both parents and children frequently produced evaluative person perception terms – especially *good*, *nice*, *bad*, and *mean*. Comparison of the two positive categories (i.e., combining *good* and *nice*) and the two negative categories (i.e., combining *bad* and *mean*) highlighted both differences and similarities between exposure and production. Specifically, parent/child similarities were evident for the negative valence labels. Both types of speakers consistently used more trait than AD terms when conversing with one

another. By contrast, with respect to positive valence labels, parents produced proportionally far more AD terms than their children across time, while children produced more trait terms than AD terms when they were younger, using more AD terms as they got older.

These findings raise questions about the extent to which children did or did not use their parents as a model. For the positive person perception terms, instead of simply attributing these terms to a person, parents often embedded these terms in conversations about ongoing situational behaviors. By doing so, it is possible that parents helped their children to strengthen the connection between the terms and behaviors, to understand the meaning of these terms, and to learn how to use them in a similar fashion.

(10) SARAH (2;5 years): *I ride horsie.*

SARAH: *in there.*

[Sarah tries to pick up the little horse]

SARAH'S MOTHER: *right in here.*

MOTHER: *you got to be **good**.* (020530.cha, lines 1109-1120)

(11) ABE'S FATHER: *okay here's some more books to put in there.*

ABE (2;6 years): *I wanna get a tiny ones in.*

ABE: *I put here a tiny ones in (.) Dad.*

FATHER: *okay Abe that's really **nice**.* (020618.cha, lines 356-370)

However, children did not simply mimic their parents' way of using person perception terms. Although they produced both AD and trait terms early on in the recordings, children initially used person perception terms to describe themselves, other people, or personified entities directly. Thus, children made attributions to people rather than confining themselves to situation-specific behavioral descriptions.

(12) SARAH (2;5 years): *I **good** girl.* (020515.cha, line 927)

(13) ABE (2;10 years): *I'm a **nice** bear.* (021006.cha, line 217)

Nevertheless, over time, arguably guided by the pattern of parental input, children increasingly used person perception terms in reference to ongoing behaviors and situations, not just to people or personified entities.

(14) ABE'S FATHER: *that wasn't very **nice**.*

ABE (2;8 years): *Lisa (.) that's not **nice**!*

ABE: *that was naughty!*

FATHER: *did you tell her that it wasn't very **nice**?*

ABE: *uhhuh that's not very **nice** (.) Lisa!* (020814.cha, lines 1288-1302)

Children's growing propensity to use positive person perception terms to describe their own and other people's actions is consistent with previous findings demonstrating their relative ease in inferring positive (rather than negative) traits (Boseovski & Lee, 2008) and their decreasing need for behavioral instances to make a trait inference (Aloise, 1993; Boseovski & Lee, 2006).

We also examined the relative frequency of references to particular targets – that is, to whom the person perception terms were applied. Overall, the children themselves (Abe,

Adam, Naomi, and Sarah) were the most common targets, with regards to both the person perception terms they heard their parents use and the terms they produced themselves; by contrast, parents and children rarely referred to the parents in their conversations. Thus, children effectively hear a lot about themselves, and in turn children talk about themselves frequently. These references – whether by children or their parents – often involve descriptions of children’s ongoing actions, allowing them to learn the person perception terms that capture their current behavior. Effectively, children receive, and also engage in, a running commentary about their ongoing actions.

Nevertheless, other findings indicate that children also realize that person perception terms can be used as attributes of persons and not just their actions, i.e., children appear to understand that personality traits apply to an individual. As noted earlier, children produce trait terms in the earliest transcript. In addition, they make repeated and differentiated attributions of the same personality trait to a given person in the course of a given conversation. For example:

(15) ABE (2;5 years): *you funny guy.*

ABE’S FATHER: *you’re a funny guy.*

ABE: *I’m Abe.*

ABE: *you’re a funny guy.*

ABE: *you’re a funny camel.* (020529.cha, lines 689-701)

Instances such as these are consistent with previous research on children’s understanding of trait inferences (Bretherton & Beeghly, 1982; Chen et al., 2016; Liu et al., 2007), suggesting from an early age, children can conceptualize traits as attributes of a person.

Contrary to our speculative hypothesis, children did not confine their attributions to themselves and their interlocutor. Particularly when producing trait terms, children frequently made attributions to a third party who was not participating in the conversation. To further examine such attributions, we focused on the frequency with which children produced trait terms as a potential interpretation of an action or preference that was mentioned in their conversations with their interlocutors. We found that these interpretive usages occupied a considerable percentage of the trait terms that children produced. Thus, interpretive usages were not isolated or rare occurrences. Second, interpretive usages were not confined to a small subset of trait terms. They were produced across almost all of the person perception categories (with the sole exception of *quiet*). Third, the more trait terms that children produced within a certain person perception category, the more instances of interpretive usage were identified for that category. By implication, the tendency to produce such interpretive usages was a generic strategy that children readily extended to almost all trait terms, commensurate with the base-line frequency with which such trait terms were produced. Last but not least, no such correlation was found between the frequency of interpretive usages and the frequency of particular AD categories, consistent with the working assumption in this paper that trait attributions to a person should be differentiated from descriptions of ongoing behavior.

These findings imply that as children came to incorporate trait terms into their conversations, they also used them in a way that reflected an understanding of traits as person attributes. According to this account, young children, including 2-year-olds, are trait theorists – they readily conceptualize overt behavior as being produced and guided by

various states and dispositions. Thus, they are prone to conceptualize traits such as *good* or *mean* as personal characteristics that help to explain why individuals behave as they do. It is important to acknowledge, however, that such interpretive usages were typically focused on some ongoing or very recent behavior. Hence, initially children may not view the dispositions that they attribute as predictors of future behavior across time and across situations. Further research is needed to assess the extent to which children are making local or more stable and wide-ranging interpretations of behavior.

Nevertheless, an advantage of this emphasis on children as trait theorists is that it helps to situate their early production of person perception terms within the much larger body of research devoted to the study of young children's theory of mind. Although much of the experimental work on children's theory of mind has invited them to make predictions about what a story protagonist is about to do, there has also been a sustained interest in the extent to which children invoke mental states in order to explain or interpret what someone has just done. For example, prior work has shown that by two years of age, children often sought explanations from their parents in conversations and were capable of providing explanations by the age of three (Hickling & Wellman, 2001; Wellman, 2011). Consistent with their usage of trait terms in the present study, children often gave explanations in reference to persons, over other entities such as objects and animals (Hickling & Wellman, 2001).

Finally, our results indicate that young children are not just becoming trait theorists. They are using this capacity to form portraits of particular individuals, especially themselves, as early as the third year. Because our study was limited to the transcripts of four English-speaking children in America, with the earliest transcripts recorded at 1;2 years of age (for Naomi), we acknowledge the possibility that children are learning about person perception in general and about themselves in particular at even earlier ages. Further work should include recordings (either from CHILDES or from other available databases) of children who were recorded prior to 1;2 years, as well as children from different cultures. Experimental work with younger children may also provide additional insights. With that caveat, our findings are in line with previous work demonstrating that children's self-concept emerges by 3;6 years of age (Eder, 1990) and becomes fairly robust and nuanced by the time they enter preschool (Marsh, Ellis, & Craven, 2002). Our results are also consistent with research indicating that parent-child conversations can assist preschool children in developing their self-concept, typically through reminiscing about past events and the emotions associated with those events (Bird & Reese, 2006). We build on this research by showing that parents and children also refer to traits, directly or indirectly, not just when reminiscing but also when discussing present occurrences, allowing children to consider this trait information in relation to themselves, determining which characteristics appear consistently for them and how these characteristics may differentiate them from other people.

Along with developing their self-concept through person perception term usage, children may also be learning to use these terms, particularly those that are evaluative in nature, to make judgments about other people. Children first begin to hear about other people and their actions from their parents, even before preschool age; by listening to their parents, they learn to tell similar stories, both about themselves and about others (Engel, 2015). A recent study demonstrated that by the time they are in preschool, three- and four-year-old children often talk about people in daily conversations with one another, with 77.5% of the 507 conversational initiations recorded containing references to people

(O'Neill, Main, & Ziemski, 2009). At three years of age, children are able to share social information with others about potential informants, i.e., guiding a confederate to choose the prosocial puppet over the antisocial puppet (Engelmann, Herrmann, & Tomasello, 2016). By five years of age, they are also able to gossip about these informants, that is, making an evaluation about the puppets ("You should play with the green puppet because she is more generous," Engelmann et al., 2016, p. 451). The present findings show that such evaluative remarks about the traits of other people, including third parties who are not part of the ongoing conversation, are a very early feature of parent-child exchanges.

To conclude, the early emergence of person perception terms in children's conversations with their parents suggests that the groundwork for person perception is supported by the conversations that they have with their primary caretakers. Like their parents, children often use person perception terms to characterize an ongoing, situation-specific behavior. However, children do not restrict their comments to such behavioral descriptions; they also use person perception terms to comment on the person who is engaged in that behavior. Indeed, there is considerable evidence that young children are trait theorists in the sense that they invoke a person's trait-like dispositions as a way to interpret or explain an action or preference that has been identified in the course of the conversation. Admittedly, such remarks are relatively simple – many consist in characterizing a given person either negatively (*bad*, *mean*) or positively (*good*, *nice*). Still, they suggest, in line with research on the theory of mind, that children readily interpret overt behavior in light of dispositional or internal states.

As with other such states, for example our emotions (Hoemann et al., 2019), language – more specifically, the trait-related words and labels that children hear from their caregivers – is likely to shape children's person perception understanding at a young age and guide their usage of the same trait words. That so many of these terms were focused on the child and were also evaluative (often positively so) may allow children to develop their self-concept and to make judgments about other people, judgments which they can in turn share with other people. The trait attributions young children make, based on what they hear or see in their daily lives, may also play a key role in helping them to judge the competence and trustworthiness of interlocutors – evaluations which are made on the basis of hearsay as well observation (Harris, 2012). How children learn to speak to those closest to them about other people (and their behavior) can be crucial to their decisions about with whom to interact and from whom to learn.

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