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Parent Praise to 1- to 3-Year-Olds Predicts Children's Motivational Frameworks 5 Years Later

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In laboratory studies, praising children's effort encourages them to adopt incremental motivational frameworks—they believe ability is malleable, attribute success to hard work, enjoy challenges, and generate strategies for improvement. In contrast, praising children's inherent abilities encourages them to adopt fixed-ability frameworks. Does the praise parents spontaneously give children at home show the same effects? Although parents' early praise of inherent characteristics was not associated with children's later fixed-ability frameworks, parents' praise of children's effort at 14–38 months (N = 53) did predict incremental frameworks at 7–8 years, suggesting that causal mechanisms identified in experimental work may be operating in home environments.

A growing body of research indicates that individuals' beliefs about whether human attributes are fixed or malleable can have important consequences for their motivation, cognition, and behavior (e.g., Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Good, Aronson, & Inzlicht, 2003; Hong, Chiu, Dweck, Lin, & Wan, 1999; Heyman & Dweck, 1998; Levy, Stroessner, & Dweck, 1998). However, little research has investigated how these beliefs and behaviors develop. In this study, we asked whether the types of praise that parents give their young children at home play a role in the development of children's beliefs about the malleability of traits, motivation to pursue challenging tasks, attributions for success and failure, and ability to generate strategies for improvement.

Praise is an important vehicle through which children become aware of the beliefs and values of their caregivers. Children who hear praise for effort and actions may construct a very different belief system from children who hear praise for traits (e.g., Kamins & Dweck, 1999; Mueller & Dweck, 1998). Children who hear a greater proportion of process praise (e.g., "you worked hard") may come to believe that the sources of their accomplishments are effort and deliberate practice, whereas children who hear a greater proportion of person praise (e.g., "you're so smart") may come to believe that the sources of their accomplishments are fixed traits (Zentall & Morris, 2010). Laboratory studies have established that using person versus process praise can impact children's beliefs and behaviors in the short term (Cimpian, Arce, Markman, & Dweck, 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Zentall & Morris, 2010). However, to our knowledge, this is the first study to investigate the effects of these types of praise in real-world parent–child interactions.

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In a given domain, individuals generally hold one of two distinct beliefs about human attributes: the belief that an attribute is malleable, or the belief that an attribute is fixed and unchangeable (e.g., Blackwell et al., 2007; Dweck, 2006, 2007; Dweck & Leggett, 1988). Although not usually conscious or articulated, these beliefs lead to a coherent set of attributions, attitudes, and behaviors (Dweck, 2006; Dweck & Leggett, 1988). An individual who believes that an attribute is an unchangeable, fixed "entity" is said to hold an *entity theory* about that attribute, whereas an individual who believes in the malleability of an attribute is said to hold an *incremental theory*. An incremental theory of a trait is associated with adaptive, mastery-oriented responses to setbacks in that domain, whereas an entity theory is associated with more helpless responses (e.g., Blackwell et al., 2007). In this article, we will use the term *motivational frameworks* to refer to children's entity or incremental theories, in combination with the beliefs, attributions, attitudes, and behaviors that go along with those theories. More specifically, we refer to the beliefs, attributions, attitudes, and behaviors associated with an incremental theory as an *incremental framework* and those associated with an entity theory as an *entity framework.*

Previous research has established the coherence of these motivational frameworks across a variety of measures (e.g., Blackwell et al., 2007; Dweck & Leggett, 1988; Heyman & Dweck, 1998; Mueller & Dweck, 1998). People with an entity theory of intelligence (i.e., who believe that intelligence is a fixed, unchanging trait) view challenging situations as "tests" of whether they have a high amount of fixed intelligence, leading them to value how well they perform over the learning process (i.e., they have a "performance goal"). Those who hold an entity theory of intelligence also view mistakes, and even the need to exert effort on an academic task, as diagnostic of low fixed ability (e.g., Blackwell et al., 2007; Dweck & Leggett, 1988). Valuing performance outcomes over learning and having negative views about mistakes and effort, in turn, lead to helpless responses to setbacks, such as decreasing effort, cheating, or avoiding similar situations in the future (Blackwell et al., 2007; Mueller & Dweck, 1998). In the classroom, an entity framework (the belief that ability is fixed, performance goals, negative beliefs about effort, low ability attributions, and helpless responses to failure) predicts worsening grades over time (Blackwell et al., 2007).

An incremental theory, on the other hand, offers individuals a more adaptive motivational framework. Because they believe that ability can be improved, individuals with an incremental theory tend to value learning over performance (i.e., they have a "learning goal"), view effort as positive, and interpret a challenging situation as an opportunity to learn and improve rather than as a troubling diagnosis of low ability (e.g., Blackwell et al., 2007; Heyman & Dweck, 1998). Having an incremental theory thus leads to more "mastery-oriented" responses to setbacks. Indeed, teaching middle school and college students that intelligence is malleable has been shown to improve academic achievement (Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003).

Not only do implicit theories of intelligence affect children's academic achievement, but implicit theories of sociomoral goodness (e.g., theories about whether a person's "niceness" or "goodness" is fixed) affect children's ability to reason prosocially and resolve interpersonal conflicts (Erdley & Dweck, 1993; Levy & Dweck, 1999; Levy, Stroessner, & Dweck, 1998; Giles & Heyman, 2003). For example, children with an entity theory of sociomoral goodness (who believe that goodness or badness is fixed) tend to make more stereotypical judgments of social groups, to persist in negative trait beliefs even in the face of counterevidence, and to stereotype individuals based on the actions of only a few in their group (Erdley & Dweck, 1993; Levy & Dweck, 1999). Even as early as preschool, children who have an entity theory of sociomoral goodness make fewer prosocial inferences about others, engage in fewer prosocial behaviors in preschool, and are more likely to endorse aggression than children who have an incremental theory of sociomoral goodness (Giles & Heyman, 2003). In other words, children who believe that "bad" people cannot change are less motivated to resolve interpersonal conflict in a positive way. Thus, for both intelligence and sociomoral goodness, the belief that traits are malleable leads to more positive and adaptive behaviors than the belief that traits are fixed.

Given the importance of these motivational frameworks, it is critical to understand *how* they develop. Individual differences in implicit theories of human attributes begin to emerge in the preschool years (Giles & Heyman, 2003; Kinlaw & Kurtz-Costes, 2007; Smiley & Dweck, 1994). However, it is unknown why one child comes to believe that traits such as intelligence and sociomoral goodness are malleable, whereas another child comes to believe that they are fixed. Previous research suggests that one influence on children's implicit

theories may be the way they are praised. Short-term laboratory studies have shown that praising children for their ability (person praise) leads them to adopt attitudes, behaviors, and beliefs consistent with an entity theory, whereas praising children for their work, effort, or strategies (process praise) leads them to adopt attitudes, behaviors, and beliefs consistent with an incremental theory (Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Zentall & Morris, 2010). Praising the child as a person seems to imply that the child's ability or goodness stems from an innate, fixed trait, whereas praising the process implies that the child's ability or goodness is malleable and depends on the effort he or she puts forth.

Mueller and Dweck (1998) carried out a laboratory study that showed just this pattern of results. They asked fifth-graders to complete a set of Raven's Progressive Matrices and then praised their performance. Some children were given person praise, such as "You must be smart at these problems," while other children were given process praise, such as "You must have worked hard at these problems." Children were then given a harder set of problems and were told that, this time, they performed poorly. Compared to children who were initially given person praise, children who were initially given process praise were more likely to endorse an incremental theory, to attribute their subsequent failure to insufficient effort, to express more desire to persist in the task after it had become difficult, to report enjoying the harder problems, and to show interest in learning how they might improve on the task as opposed to hearing how their performance compared to that of other children. Furthermore, when given a final set of problems similar in difficulty to the first set they were praised for, children given process praise showed an increase in performance relative to their performance on the first set, whereas children given person praise showed a decrease in performance. Although person praise may seem like a good way to increase children's global self-esteem, these results indicate that this kind of praise makes children adopt an entity mind-set about a task; children praised in this way then become highly sensitive to fluctuations in their level of performance and less likely to exhibit adaptive, mastery-oriented responses to setbacks, ultimately showing decrements in performance.

Other studies show that as early as kindergarten (Kamins & Dweck, 1999; Zentall & Morris, 2010) and preschool (Cimpian et al., 2007), children are susceptible to the effects of person and process praise. For example, Kamins and Dweck (1999) found that kindergarteners given process praise during a role-playing procedure became more likely than children given person praise to respond to a subsequent setback with positive affect, high persistence, and more positive self-assessments. In a similar role-playing procedure conducted with preschoolers, Cimpian et al. (2007) found that children given nongeneric praise (e.g., "you did a good job drawing"), which functions as process praise, showed more positive self-assessments and greater task persistence than children given generic praise (e.g., "you are a good drawer"), which functions as person praise. Furthermore, Zentall and Morris (2010) showed that kindergarteners are sensitive to the relative proportions of person and process praise they hear during a task. Little is known about how children younger than preschool-age respond to person and process praise in similar scenarios, but the literature provides no evidence of a lower age bound to children's sensitivity to the type of praise they hear.

Taken together, these studies demonstrate that person and process praise change children's beliefs about the malleability of the traits that were praised, which in turn influences the way children respond to setbacks and perform on challenging tasks. In other words, person praise leads to an entity framework, whereas process praise leads to an incremental framework.

However, an important limitation of the existing evidence about person and process praise is its exclusive focus on short-term effects of praise administered in experimental contexts. It is currently unknown whether children differ with respect to the kinds of praise they hear in naturalistic interactions in ways that resemble the person and process praise administered in laboratory settings and, if so, whether these differences predict children's adoption of an entity or incremental framework over a longer time scale. Over the course of childhood, children are likely to hear a variety of types of praise from multiple different sources and even from the same individual. For example, a mother may say "good job," "you're good at that," and "nice!" even within the same interaction. Given this variation in praise, it is important to describe the types of praise parents give their children early in development and to determine whether children are sensitive to the relative proportions of different types of parental praise.

Our study examines these questions by analyzing parental praise that occurs during naturalistic

interactions in the home environment and exploring its impact on children's later motivational frameworks. Previous research demonstrates that other aspects of the parent–child interaction influence mastery versus helpless responses to challenge, such as whether mothers emphasize their children's successes or failures (Moorman & Pomerantz, 2008; Ng, Pomerantz, & Lam, 2007). Furthermore, parent talk to preschoolers in the home has been found to predict multiple aspects of children's development, including vocabulary growth (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; Rowe, Raudenbush, & Goldin-Meadow, 2012) and mathematical development (Levine, Suriyakham, Rowe, Huttenlocher, & Gunderson, 2010). Of particular relevance to this study, parents' use of generics and their focus on gender may lead children to view gender as an essentialized, natural, and universal category (Gelman, Taylor, Nguyen, Leaper, & Bigler, 2004). Similarly, we hypothesize in this study that parents' use of praise implying that traits are fixed versus malleable may lead children to adopt an essentialized view of individuals' traits.

Our study examines variation in parents' spontaneous use of praise with their young children (ages 14 to 38 months). We chose to measure parents' praise when children were 14 to 38 months old because at this age, prior to formal schooling, children are likely to receive the majority of their praise in the home environment. Our study had two main goals. First, we characterize the praise that parents give their children in a naturalistic setting and examine whether certain parent and child factors, such as parents' own implicit theories and child gender, influence what type of praise is most frequent. Second, we investigate whether parents' use of person versus process praise predicts children's motivational frameworks 5 years later.

To address our first goal, we measured how often the kinds of person and process praise used as manipulations in laboratory settings actually occur in naturalistic settings. We also examined gender as one child factor that may influence the type of praise parents provide. Previous studies have shown that parents and teachers differ in their interactions with boys versus girls. For example, parents are more likely to explain science to boys than to girls while exploring exhibits in a science museum (Crowley, Callanan, Tenenbaum, & Allen, 2001). Furthermore, teachers praise girls and boys differently, and these differences promote effort attributions (associated with an incremental theory) in boys (Dweck, Davidson, Nelson, & Enna, 1978) and ability attributions (associated with an entity theory) in girls (Dweck et al., 1978; see also Dweck & Bush, 1976). In addition, boys and girls respond differently to different types of praise (Henderlong & Lepper, 2002), and these differential responses may result from different histories of praise. In this study, we investigated whether parents' naturalistic use of person and process praise is related to child gender. On the basis of the previous research, we predicted that parents would provide girls with less process praise, and more person praise, than boys.

To address our second goal, we investigated the relation between parents' use of person and process praise at 14 to 38 months and children's subsequent motivational frameworks at 7–8 years of age. We chose to measure children's motivational frameworks at this age because children are able to reliably answer questions about their motivational frameworks in the sociomoral and intelligence domains (e.g., Giles & Heyman, 2003; Kinlaw & Kurtz-Costes, 2007; Smiley & Dweck, 1994). We sought to broadly assess children's motivational frameworks in both the sociomoral and intelligence domains, including their beliefs about trait stability, preference for challenge, attributions for success and failure, and ability to generate strategies for improvement. Given that children's motivational frameworks tend to be consistent across domains (Heyman & Dweck, 1998), and given that the demarcation between events in the sociomoral and intelligence domains is often unclear for young children, we did not expect parents' praise to differentially relate to these different aspects of children's motivational frameworks. Our main hypotheses were that parents' process praise at 14 to 38 months would be positively related to children's incremental frameworks and that parents' person praise would be negatively related to children's incremental frameworks at 7–8 years of age.

Method

Participants

Participants were 53 children and their primary caregivers (PCGs) from the greater Chicago area (29 boys, 24 girls). Participants were drawn from a larger sample of 63 families in a longitudinal study of child language development, and were chosen to reflect the demographic composition of the greater Chicago area in terms of income and race and ethnicity. Ten families from the original sample were not included because of missing parent–child observations ($N = 5$) or missing measures of children's motivational frameworks ($N = 5$).

We used family income and the primary caregiver's highest level of education at the start of our project as measures of socioeconomic status (SES). Parents' education ranged from 10 to 18 years (M = 15.9, SD = 2.1; 10 years is less than high school and 18 years is a graduate degree). Family incomes ranged from less than $15,000 to over $100,000 per year ($M$ = $61,698, SD = 31,328). Based on parental report, 64% of the children in the sample were White, 17% African American, 11% Hispanic, and 8% two or more races.

Procedure

Children and parents were visited in their homes by a researcher every 4 months beginning at 14 months of age. Our analysis of praise examines the visits that occurred at child ages 14, 26, and 38 months. Parents were ostensibly participating in a study of child language development, and neither parents nor research assistants who videotaped interactions and administered measures to children were aware that praise would be studied. During these visits, children's and parents' spontaneous interactions were videotaped for a period of 90 min while they engaged in their typical daily activities, such as playtime, meals, routines such as getting dressed and cleaning up toys, and so on. Parents were not instructed to engage in any specific activities, but were asked to go about a typical day as they would without an experimenter present. All speech was transcribed from the videos and separated into utterances. An utterance was defined as any sequence of words preceded and followed by a pause, a change in conversational turn, or a change in intonational pattern. Reliability was established by having a second coder transcribe 20% of the videos. Reliability was assessed at the utterance level and was achieved when the coders agreed on 95% of transcription decisions. Both the parents and the researchers who videotaped and transcribed these spontaneous speech sessions were blind to the study's hypotheses and unaware that parents' praise would be coded.

When children were 7 to 8 years old (second or third grade), they completed two brief, orally presented questionnaires probing their motivational frameworks during two visits, about 3 months apart. The two questionnaires were similar in content and were combined to create a single motivational framework score for each child. These two questionnaires were each administered in the context of a larger battery of cognitive tasks in a session that lasted approximately 2 hr. The average age at the first visit was 8.1 years (SD = 0.2, range = 7.4 to 8.5 years) and at the second visit was 8.4 years (SD = 0.2, range = 7.7 to 8.8 years).

Measures

Parent praise. Researchers identified parental praise utterances by reading the transcripts of parents' speech and viewing the videotaped interactions when it was unclear from the transcript how an utterance should be coded. A parent's utterance was classified as containing praise if it provided positive feedback in response to the child, whether the positive valence was explicit (contained words like *nice*, *good*, and *great*) or implicit (affirmed child's actions without an explicit valence word, e.g., "you got it!").

Praise utterances were then coded as belonging to one of the three categories:

1. *Process praise*. Our definition of process praise was informed by previous laboratory studies. For example, phrases like "you must have tried hard" were coded as process praise (Mueller & Dweck, 1998). We also coded phrases like "good job drawing" as process praise based on Cimpian et al.'s (2007) study showing that this kind of nongeneric praise functions similarly to process praise. What distinguished process praise from other kinds of praise is that it emphasized a child's effort (e.g., "good job trying to put that back in"), strategies (e.g., "I like how you covered your mouth"), or actions (e.g., "great catch").

   It is interesting to note that most of the process praise utterances we saw in this naturalistic data set were phrases like "good job" or "good running." The richer process praise that is often used in experimental studies was rarely used with children of this age. For example, the authors do not recall coding a phrase like "you must have tried hard." It thus becomes important to determine whether the kind of process praise commonly used by parents of young children, which appears to praise effort less explicitly than the praise used in experimental paradigms, has an impact on children's motivational frameworks. Based on previous research examining the consequences of different types of praise (Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998), we expected process praise to positively predict incremental frameworks (i.e., the belief that human attributes are malleable, as well as

motivations associated with this belief such as the desire to learn from difficult tasks).

2. *Person praise*. Also based on the literature described previously, an utterance was classified as person praise if it implied that a child possessed a fixed, positive quality. This category primarily included utterances that provided a label for the child without a verb (e.g., "good girl," "big boy") or described the child using a copular verb plus a predicate (e.g., "you're so smart," "you're good at that"). Even though utterances such as "big boy" could be interpreted as emphasizing children's growth and development, we chose to code them as person praise because they contain a label for the child. As support for this decision, we found that utterances containing "big boy" and "big girl" were positively correlated with parents' other person praise utterances, as a proportion of total utterances, $r(51) = .29$, $p < .05$, but were not correlated with parents' use of process praise, $r(51) = -.05$, $p = .73$. Nevertheless, when utterances including "big boy" or "big girl" were excluded from person praise, the pattern of results remained the same.
3. *Other praise.* Other praise included all praise utterances that did not fall into the process or person praise categories. This type of praise encompassed most of the parental praise ($M = 66.0\%$, $SD = 19.8\%$) because many parents often just gave praise by expressing general positive valence (e.g., "Good!" or "Wow!"). More specifically, the "other" praise category included three types of utterances: (a) praise that included a clear positive valence but was not explicit about whether the target of the praise was the child's process or personal traits (e.g., "very good"), (b) praise that affirmed a child's actions with an implicit rather than an explicit statement of positive valence (e.g., "you got it!"), and (c) praise directed toward the outcome of a child's actions (e.g., "nice picture"). While a phrase like "nice picture" may seem somewhat similar to phrases like "good catch" or "good job," we considered an utterance to be process praise when the target of the praise was the child's action (e.g., the catch or the job) and to be other praise when the target of the praise was a product of the child's action (e.g., the picture).

One might argue that some praise utterances included in the "other" category were intended by the parents to refer to the child's process or actions. Our coding scheme did not allow us to capture parental intentions that were not expressed explicitly in their words. We chose to be conservative and only categorize an utterance as process praise if an action was specifically referenced. Similarly, we only categorized an utterance as person praise if the child was specifically referenced. Although we did not have specific predictions about how other praise would relate to our outcome measure, we included it to adequately characterize the total amount of praise that children hear as well as the proportion of praise devoted to the praise types of interest (person and process praise).

Total praise as a percentage of total utterances. The total number of praise utterances was divided by the total number of parent utterances of any kind (praise and nonpraise) to form a measure of praise as a percentage of total utterances. We used a proportional measure to control for total amount of child-directed speech.

Person, process, and other praise as a percentage of total utterances. The number of praise utterances of each type (person, process, and other) was divided by the total number of parent utterances of any kind (praise and nonpraise) to form measures of each praise type as a percentage of total utterances. These measures allow us to understand the frequency of different types of praise while equating overall talkativeness across parents.

Person, process, and other praise as a percentage of total praise. The number of praise utterances of each type (person, process, and other) was divided by the total number of praise utterances to form measures of each praise type as a percentage of total praise. These measures allow us to understand the relative frequency of different types of praise while equating overall amount of praise across parents.

Intercoder reliability. Twenty percent of transcripts from observations at each child age were selected to be coded independently by at least two coders. Disagreements were discussed among coders and resolved. A Cohen's kappa value (Cohen, 1960) was computed for each pair of coders for each transcript. The median kappa value was .81, indicating high agreement.

Parents' SES. Family income and the primary caregiver's years of education at the time of entry into the study were considered as indicators of SES, as described previously. Since parents' education and family income were positively correlated, $r(51) = .44$, $p < .001$, we used principal components analysis to find a common factor. The analysis resulted in one factor that weighted income and

education positively and equally, accounting for 72% of the variance. This factor was used as our measure of SES.

Children's motivational frameworks. Children's motivational frameworks were assessed using two questionnaires, administered approximately 3 months apart, when children were 7 to 8 years old and in second or third grade. We have conceptualized these two questionnaires as a single measure of children's motivational frameworks administered across two data collection visits. The two questionnaires were very similar in content, containing some overlapping items, and both were designed to assess children's motivational frameworks in the sociomoral and intelligence domains. All 24 items (11 items from the first questionnaire and 13 items from the second questionnaire) are listed in online Appendix S1. Sixteen children did not complete all 24 items, but they did not differ from children with complete data on any measures. To maximize the amount of data available, we used all the items that each child completed when computing average scores.

Children's motivational frameworks were measured with respect to their beliefs about trait stability, their preferences for learning versus performance goals, their attributions for success and failure, and their ability to generate strategies for improvement. We included questions addressing each of these components because we sought to characterize children's motivational frameworks, which are multifaceted systems of beliefs, attributions, attitudes, and behaviors. We expected each of these components to relate to process and person praise in the same way. We therefore used a composite measure to provide a more reliable estimate of each child's motivational framework than any individual subcomponent would provide. The questionnaires measured children's motivational frameworks in both the sociomoral and intelligence domains. As noted in the Introduction, we did not expect parents' praise to differentially relate to children's motivational frameworks in these two domains; we included both domains to establish a broad measure of children's motivational frameworks.

Intelligence domain. Motivational frameworks in the domain of intelligence were measured using 18 questions adapted from Heyman and Dweck (1998) and Kinlaw and Kurtz-Costes (2007; see online Appendix S1.). Using a 5-point scale, several questions assessed children's beliefs about whether intelligence is fixed (e.g., Item 1, "Imagine a kid who thinks that a person is a certain amount smart, and they stay pretty much the same. How much do you agree with this kid?") and children's orientation toward learning versus performance goals (e.g., Item 9, "How much would you like to do mazes that are very hard so you can learn more about doing mazes?"). Additional open-ended questions assessed children's success attributions (Item 17, "Think of kids in your class who get a lot right on their schoolwork. Why do you think they get a lot right?") and ability to generate strategies for improvement (Item 18, "Imagine that a kid you know keeps getting lots and lots wrong on their schoolwork and asks you for your help. What would you say or do?"). These two open-ended items were used by Heyman and Dweck and were scored using the same criteria they used. Reliability was established between coders for each open-ended question (αs greater than or equal to .75).

Items were reverse-coded when necessary so that a higher score was always associated with a more incremental framework (e.g., believing that intelligence is malleable). We transformed the responses on each item into a standardized z score ($M = 0$, $SD = 1$). Reliability for the 18 items in the intelligence domain (based on the subsample of 37 children who completed all 18 items) was $\alpha = .61$. We averaged these standardized scores together to form a composite measure of beliefs in the intelligence domain ($M = 0.0$, $SD = 0.38$, range = -1.09 to 0.68).

Sociomoral domain. The tendency to view behaviors as indicative of underlying sociomoral attributes was measured using six yes-or-no questions adapted from Heyman and Dweck. The questions are listed in online Appendix S1. For example, one question (Item 19) asked children, "Imagine a girl who gets into trouble a lot at school. Some people think she will keep getting into a lot of trouble even when she is in high school. Do you think this is right?" A response of "yes" to this question indicates endorsement of an entity theory of sociomoral attributes. For each question, we replicated the gender-specific questions asked in Heyman and Dweck about a "boy" and a "girl" and also added a gender-neutral question about a "kid."

Items were reverse-coded when necessary so that a higher score was always associated with a more incremental framework (e.g., believing that sociomoral goodness is malleable). We transformed the responses on each item into a standardized z score ($M = 0$, $SD = 1$). Reliability for the six items in the sociomoral domain (based on the subsample of 42 children who completed all six items) was $\alpha = .75$. We averaged these standardized scores together to form a composite measure of beliefs in the socio-

moral domain ($M = 0.0$, $SD = 0.67$, range = −1.26 to 0.92).

Overall motivational framework score. We created a composite measure across domains by averaging the standardized scores across all 24 items (18 items from the intelligence domain and 6 items from the sociomoral domain). The composite score had a mean of 0.0 ($SD = 0.37$), with a range from −0.91 to 0.72. The reliability for the 24-item composite scale (based on the subsample of 37 children who completed all 24 items) was $\alpha = .70$.

Parents' implicit theories. When children were 7–8 years old, parents' implicit theories about the malleability of cognitive abilities were measured using an eight-item questionnaire (adapted from Hong et al., 1999). This measure was used to rule out the possibility that parents' own incremental theories at the time children were tested influenced children's concurrent motivational frameworks.

The parent questionnaire items were asked in the context of a larger questionnaire assessing parents' beliefs and behaviors related to children's academic development. All items were recorded on a Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Four items asked how strongly parents agreed with statements indicating that intelligence is a fixed trait (e.g., "People have a certain amount of intelligence, and they can't really do much to change it."). Four items asked how strongly parents agreed with statements indicating that specific abilities in the domains of math, reading, writing, and spatial ability are fixed (e.g., "Someone's math ability is something about them that they can't change very much."). Seven parents did not complete the questionnaire; the sample size for analyses involving parents' implicit theories was therefore 46.

We reverse-coded all items on the parent implicit theory questionnaire so that a higher score indicated greater endorsement of an incremental theory of human attributes. As with the child motivational framework questionnaire, we transformed each item in the parent implicit theory questionnaire into a z score ($M = 0$, $SD = 1$) and averaged all items to form a composite score. The composite score had a mean of 0.0 ($SD = 0.8$) and a range from −2.60 to 1.19. The reliability for the eight-item scale was $\alpha = .92$.

Results

Characterization of Parent Praise

Our first goal was to characterize naturalistic parent praise. We did this by first examining the overall frequency of praise, as well as the frequency of praise of each type, as a percentage of total parent utterances. We next characterized the percentage of parent praise devoted to person, process, and other praise, and described the relations among the different types of praise. We also examined the consistency of parents' praise over our three child ages (14, 26, and 38 months). Finally, we examined the relation of each type of praise to parent SES and child gender.

Overall frequency of praise. Cumulatively across the three time points, praise accounted for an average of 3.0% of total utterances ($SD = 1.54\%$). However, there was a great deal of variation among parents, with praise utterances encompassing from 0.5% to 7.9% of parents' total utterances. Table 1 reports the frequency of each type of praise, both as a percentage of total utterances and as a percentage of overall praise utterances. Process praise (e.g., "you're doing a good job") and person praise (e.g., "good boy") were similar in frequency, accounting for 18.0% ($SD = 16.3\%$) and 16.0% ($SD = 14.4\%$) of all praise utterances, respectively.

To characterize the relations among different types of praise, we conducted correlations among the total amounts of person, process, and other praise utterances across all three time points (each type of praise was measured as a percentage of total utterances, arcsine transformed). Note that for all subsequent analyses using correlations, regres-

Table 1
Examples and Frequencies of Each Type of Praise Utterance

Praise type	Examples	Percentage of total utterances *M* (*SD*)	Percentage of praise utterances *M* (SD)
Process	You're doing a good job. Good throw. I like the way you covered your mouth.	0.59 (0.73)	18.0 (16.3)
Person	Good girl. You're a big boy. You're so smart.	0.45 (0.51)	16.0 (14.4)
Other	That's a pretty picture. (*outcome*) Nice. (*general positive valence*) There you go. (*affirmation*)	1.97 (1.19)	66.0 (19.8)
Total		3.00 (1.54)	100.0

Note. Praise was measured cumulatively across three visits at child ages 14, 26, and 38 months ($N = 53$).

sions, and *t* tests on percentages, we used the arcsine transformation (2 × arcsin[sqrt(x)]) to correct for nonnormality in the measures. Parents' use of process praise was not significantly related to their use of person praise, $r(51) = -.03$, $p = .81$, or other praise, $r(51) = .13$, $p = .37$. Similarly, parents' use of person praise was not significantly related to their use of other praise, $r(51) = .04$, $p = .79$.

Longitudinal change and consistency in praise. Next, we examined whether the relative proportions of each type of praise changed or remained stable as children grew older. Overall praise as a percentage of total utterances remained stable from child ages 14 months ($M = 3.0\%$, $SD = 2.0\%$), to 26 months ($M = 2.9\%$, $SD = 1.8\%$), to 38 months ($M = 3.2\%$, $SD = 1.9\%$). In addition, parents who used more overall praise as a percentage of total utterances at child age 14 months also used more overall praise at 26 months, $r(51) = .46$, $p < .001$, and 38 months, $r(51) = .35$, $p = .01$. Parents' overall use of praise at 26 and 38 months was also significantly correlated, $r(51) = .54$, $p < .001$.

The percentage of parent praise devoted to person and process praise, by child age, is displayed in Figure 1. Parents' use of process praise as a percentage of total praise did not significantly differ between child ages 14 and 38 months, $t(52) = 1.37$, $p = .18$. However, parents' use of person praise as a percentage of total praise was significantly lower at 38 months than at 14 months, $t(52) = -5.56$, $p < .001$, whereas parents' use of other praise as a percentage of total praise was significantly higher at 38 months than at 14 months, $t(52) = 4.70$, $p < .001$.

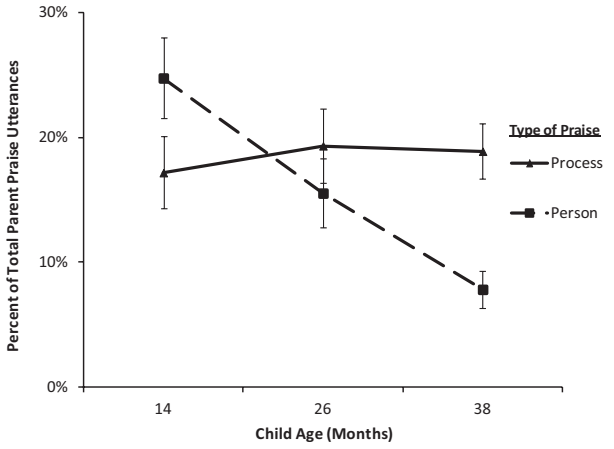

Figure 1. Parent person and process praise by child age. Change over time in amount of parents' process and person praise, as a percentage of total praise.

In addition to investigating overall trends in praise across child age, we also asked whether individual parents were consistent in their use of process, person, and other praise across the three observation sessions. To do so, we calculated correlations between parents' use of each type of praise—person, process, and other praise, as a percentage of total utterances—at child ages 14, 26, and 38 months (Table 2). Significant correlations were found among parents' use of process praise at child ages 14, 26, and 38 months. Similarly, significant correlations were found among parents' use of other praise at child ages 14, 26, and 38 months. Parents' use of person praise was significantly correlated from 14 to 26 months, $r(51) = .47$, $p < .001$, and from 26 to 38 months, $r(51) = .43$, $p = .001$, but was not significantly correlated from 14 to 38 months, $r(51) = .18$, $p = 19$. Furthermore, parents' praise was rarely correlated across praise types (Table 2). This finding suggests that parents may establish a pattern of using specific kinds of praise as early as child age 14 months and that this pattern remains relatively consistent for at least 2 years.

Relations between praise and child gender. We also considered whether parents' overall amount of praise or praise style varied by child gender. The percentage of parents' total utterances that were devoted to praise did not significantly differ between girls ($M = 2.79\%$, $SD = 1.63\%$) and boys ($M = 3.18\%$, $SD = 1.47\%$), $t(51) = 1.06$, $p = .29$. We next considered gender differences in each type of praise. Cumulatively across all three time points, boys received significantly more process praise than girls. This difference held regardless of how process praise was measured: as a percentage of total praise utterances, $t(51) = 3.20$, $p < .01$; as a percentage of total utterances, $t(51) = 3.27$, $p < .01$; or as a raw count, log transformed, $t(51) = 3.35$, $p < .01$. Cumulatively across all time points, 24.4% of the praise that boys received was process praise ($SD = 18.7\%$), whereas only 10.3% of the praise that girls received was process praise ($SD = 7.9\%$; Figure 2). In addition, boys received more process praise than girls at each child age, as a percentage of total praise: 14 months, $t(51) = 2.48$, $p < .05$; 26 months, $t(50) = 2.10$, $p < .05$; and 38 months, $t(51) = 2.35$, $p < .05$. Thus, while parents praised boys and girls equally often, parents of boys devoted more praise to their child's effort, strategies, or actions than parents of girls.

When considering person praise and other praise separately, boys and girls did not significantly differ in the proportion of person praise or other praise they received (*p*s > .05). However, when

Table 2
Correlations Among Parents' Use of Each Praise Type

	1	2	3	4	5	6	7	8
1, Process, 14 months	—							
2. Process, 26 months	.53***	—						
3. Process, 38 months	.53***	.54***	—					
4. Person, 14 months	−.20	−.12	.12	—				
5. Person, 26 months	−.14	−.11	.19	.47***	—			
6. Person, 38 months	.05	−.04	.36**	.18	.43**	—		
7. Other, 14 months	.06	−.03	−.06	.20	.03	−.14	—	
8. Other, 26 months	.20	.12	.01	.16	−.04	−.14	.44***	—
9. Other, 38 months	.38**	.25	.26	−.07	.00	.09	.36**	.56***

Note. Praise was measured across child ages 14, 26, and 38 months, as a percentage of total utterances, arcsine transformed ($N = 53$). **$p < .01$. ***$p < .001$.

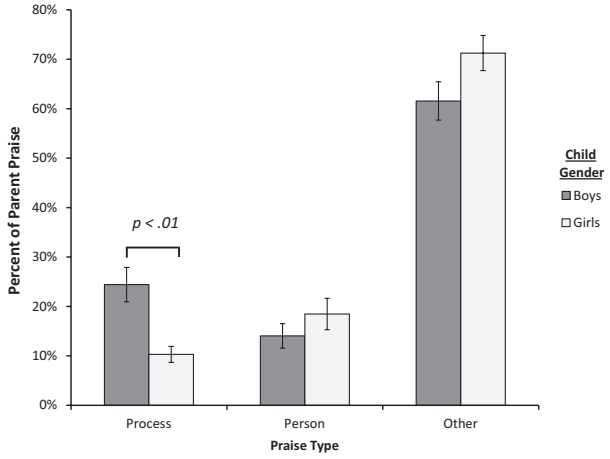

Figure 2. Percentage of parent praise of each type, by child gender.

considering person praise and other praise together as "nonprocess praise," girls received more nonprocess praise, as a percentage of total praise, than boys, $t(51) = 3.20$, $p < .01$.

Children's Motivational Frameworks

We gave children a questionnaire, described previously, which assessed their incremental versus entity frameworks at ages 7–8. There were large differences among children and, for every item, children gave the full range of possible responses. Children's average scores on items in the sociomoral domain were significantly correlated with their average scores on items in the intelligence domain, $r(51) = .31$, $p < .05$. This finding is consistent with previous research showing that young children's theories of human attributes tend to be related across the intelligence and sociomoral domains (Heyman & Dweck, 1998). On the 24-item overall measure of motivational frameworks (combining the intelligence and sociomoral domains), boys reported marginally more incremental frameworks than girls, $t(51) = 1.69$, $p = .097$. When broken down by domain, boys reported significantly more incremental frameworks than girls in the intelligence domain, $t(51) = 2.20$, $p < .05$, but not in the sociomoral domain, $t(51) = 0.20$, $p = .84$.

Parents' Incremental Theories

We asked whether parents' incremental theory scores were related to parent and child characteristics, including parents' SES, parents' praise style, children's gender, and children's motivational frameworks. Parents' incremental theory scores were significantly related to their SES, with higher SES parents reporting weaker incremental theories (i.e., stronger entity theories), $r(44) = -.37$, $p = .01$. Although parents' incremental theory scores were not related to their overall amount of praise as a percentage of total utterances, $r(44) = -0.02$, $p = .88$, they were related to their praise style. Counterintuitively, parents' higher incremental theory scores were correlated with more frequent use of person praise, as a percentage of total praise, $r(44) = .29$, $p < .05$. However, parents' higher incremental theory scores were not significantly associated with their use of process praise, as a percentage of total praise, $r(44) = -.12$, $p = .41$, or of other praise, as a percentage of total praise, $r(44) = -.13$, $p = .39$.

With respect to child characteristics, parents' incremental theory scores did not significantly

relate to their child's gender or motivational frameworks. Parents of boys did not differ from parents of girls in their endorsement of incremental theories, $t(44) = 1.07$, $p = .29$. Furthermore, parents' incremental theory scores and children's motivational framework scores were not significantly correlated, $r(44) = -.06$, $p = .70$.

Relations Between Parents' Praise Style and Children's Motivational Frameworks

Our second goal, and our main hypotheses, concerned whether parents' use of process or person praise was related to children's later incremental frameworks (e.g., incremental theory of human attributes, preference for challenge, attributions to effort, and ability to generate strategies for improvement). On the basis of previous experimental research, we hypothesized that children who received more process praise would be more likely to adopt an incremental framework several years later, whereas children who received more person praise would be more likely to adopt an entity framework (Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998).

Relation between process praise and children's motivational frameworks. In our main analyses, we measured process praise as a percentage of total praise to compare across parents who might produce different amounts of total praise utterances. As hypothesized, we found a significant correlation between parents' use of process praise as a percentage of total praise when children were 1–3 years old and children's motivational framework score at ages 7–8, $r(51) = .35$, $p = .01$. We also checked to see whether this correlation would hold when measuring process praise as a percentage of total utterances or as a raw count and, in both cases, the analyses showed the same pattern ($ps < .10$). The relation between process praise, as a percentage of total praise, and children's later incremental frameworks was similar in the domains of both intelligence, $r(51) = .26$, $p = .06$, and sociomoral goodness, $r(51) = .29$, $p < .05$. Furthermore, the correlation between process praise (as a percentage of total praise) and children's later motivational frameworks was positive at each child age that was observed: 14 months, $r(51) = .27$, $p = .05$; 26 months, $r(50) = .21$, $p = .13$; and 38 months, $r(51) = .32$, $p < .05$. This finding confirms our prediction that the more process praise children received at a young age, the more likely they would be to develop incremental frameworks.

To further explore the relation between process praise and children's later motivational frameworks, and to rule out competing hypotheses, we conducted a series of simultaneous regression models based on both our hypotheses and patterns in the data (Table 3). Our first model included only our main predictor of interest, process praise as a percentage of total praise. We then entered each possible confounding factor one at a time. To maintain the most parsimonious model, we retained a confounding factor in subsequent models only if it significantly added to the predictive power of the model, over and above process praise. All regression models were checked for violations of model assumptions, including linearity, normality, homoskedasticity, independence of errors, and collinearity; no violations were found.

First, we examined whether parents' cumulative use of process praise (as a percentage of total praise) at 14, 26, and 38 months predicted children's later motivational frameworks. We found that parents' cumulative use of process praise was a significant predictor of children's motivational frameworks at ages 7–8 years, $\beta = .34$, $p < .05$, accounting for 11.9% of the variance in children's motivational frameworks (Table 3, Model 1; see Figure 3).

We next asked whether other potential factors could explain this relation. The factors we examined were parents' overall amount of praise as a percentage of total utterances, parents' own incremental theories, parents' SES, parents' overall amount of verbal interaction with the child, and child gender. Accounting for these factors one at a time in a series of simultaneous regressions did not change the results (Table 3, Models 2–6). In fact, none of the control variables significantly predicted children's motivational frameworks over and above process praise, whereas process praise remained a significant predictor in each case.

We also confirmed these results using two theory-neutral model-building methods, forward stepwise regression and backward stepwise regression, which included process praise and all of the possible confounders listed above. In both cases, the model that included only process praise, as a percentage of total praise, was the final, best fitting model.

These regression models indicate that even after considering the possible influences of other parent and child factors, including amount of praise, parents' own incremental theories, parents' SES, parents' overall verbal interaction with their child, and child gender, parents' use of process praise continued to predict children's later adoption of an incremental framework.

Table 3
Regression Models Predicting Children's Motivational Frameworks

	Child motivational framework composite score (ages 7–8 years)					
	Parameter estimate (standardized)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Process praise as a % of total praise[a]	.34*	.36*	.36*	.34*	.32*	.30*
Praise as a % of total utterances[a]		−.08				
Parent incremental theory score			−.01			
Parent SES				.00		
Total parent utterances					.09	
Child gender						−.11
R^2 stat (%)	11.9	12.5	13.3	11.9	12.6	12.8
F stat	6.9*	3.6*	3.3*	3.4*	3.6*	3.7*
F stat degrees of freedom	(1, 51)	(2, 50)	(2, 43)	(2, 50)	(2, 50)	(2, 50)

Note. Series of simultaneous regression models predicting children's motivational framework score from parent behaviors and parent and child characteristics. Parent behaviors (praise and utterances) were measured cumulatively from child ages 14, 26, and 38 months.
[a]Proportional measures were transformed using the arcsine transformation (2 × arcsin[sqrt(x)]) to correct for nonnormality in the measures.
*$p < .05$.

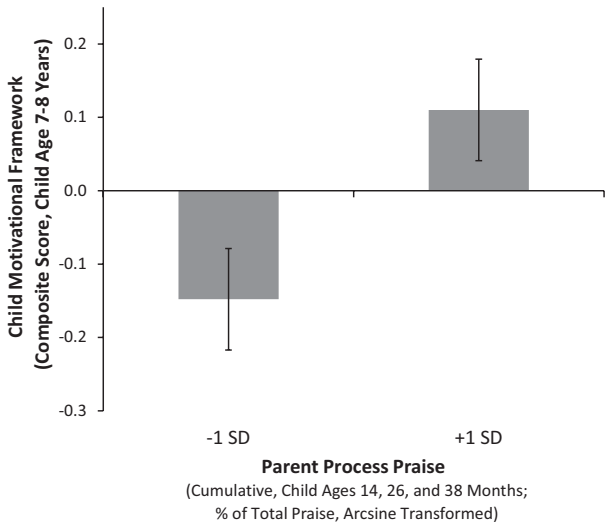

Figure 3. Parent process praise and children's motivational framework score. Children's motivational framework score, plotted at ± 1 *SD* from the mean of parents' process praise (Model 1). Positive scores indicate a more incremental framework.

Relation between person praise and children's motivational frameworks. Our second hypothesis was that children who received more person praise would show more entity frameworks (e.g., entity theory of human attributes, avoidance of challenge, attributions to fixed ability, and difficulty generating strategies for improvement). However, we found no significant correlation between person praise as a percentage of total praise and children's later motivational frameworks, $r(51) = -.05$, $p = .73$. Thus, our second prediction was not supported.

Discussion

The relative amount of process praise (e.g., "good job," "good try") that parents produced during naturalistic interactions when their children were 14 to 38 months of age was a significant predictor of children's incremental frameworks—including believing that traits are malleable, preferring challenging tasks, attributing success and failure to effort, and generating strategies for improvement—at ages 7–8 years. Children whose parents used more process praise were more likely to endorse beliefs and behaviors associated with an incremental framework, measured in the sociomoral and intelligence domains. Given that children are likely to receive praise from many adults in their environment, it is remarkable that praise occurring during these thin slices of parent–child interactions—only 4.5 hr of interaction—provided insight into how children develop an incremental framework. Importantly, the link between parents' use of process praise and children's later motivational frameworks could not be accounted for by any of the other factors we examined, including parents' overall amount of praise to their children, parents' own incremental theories, parents' SES, parents' overall amount of talk to their children, and child gender.

Although the correlational nature of our study cannot demonstrate a causal relation between process praise and children's incremental frameworks, the results build on and extend previous experimental studies that have already established a causal link between giving children process praise

in the short term and a temporary orientation toward an incremental theory of human attributes as well as an incremental framework (Cimpian et al., 2007; Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Zentall & Morris, 2010). We present here the first results indicating that the process praise children hear *naturalistically* bears a relation to their motivational frameworks that parallels the relation between process praise and motivational frameworks found experimentally. Our findings are consistent with the idea that variation in parent praise can impact children's motivational frameworks and that the roots of this impact can be traced back to the toddler years.

Since we chose to measure parents' praise when children were quite young—ages 14 to 38 months—and to measure children's motivational frameworks 5 years later, it is possible that the relation between parents' praise and children's motivational frameworks was driven by parents' continued use of process praise during the intervening 5 years. Given our finding that parents' praise style remained consistent from 14 to 38 months, it is possible and indeed likely that parents continue to use process praise at the same rate during the later years. Our findings make it clear that parents establish this specific praise style when children are quite young and that parents' naturalistic use of process praise predicts children's motivational frameworks.

Although parents' use of process praise predicted children's later motivational frameworks, we did not find the predicted relation between parents' use of person praise and children's later orientation toward an entity framework (e.g., endorsement of an entity theory of human attributes, attributing success and failure to fixed ability, and holding performance orientation). One possible reason for this finding is that the amount of person praise that parents produced declined from ages 14 to 38 months so that by 38 months, less than 10% of parents' praise utterances were devoted to person praise. (In contrast, the amount of process praise that parents produced remained consistent over time.) This decline suggests that the person praise parents give their children when they are young toddlers may differ from the kinds of person praise given to school-aged children and from the kinds of person praise given in experimental studies (e.g., Cimpian et al., 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998). Saying "good girl" to a very young child may be fundamentally different from telling a school-aged child that she is smart. Additional research investigating the effects of parents' person praise when children are older, particularly when children begin to tackle academic tasks at school and start to hear person praise that is more targeted (e.g., "you're smart," "you're good at math"), may find that naturalistic use of person praise relates to individual differences in older children's beliefs about trait stability. The age at which person praise begins to relate to a child's entity framework is an important developmental question.

This study also revealed a gender difference in the types of praise children received, such that boys received significantly more process praise than girls, even though boys and girls received the same amount of praise overall. Furthermore, boys reported more incremental frameworks in the intelligence domain than girls. These findings are consistent with literature on gender differences in children's attribution style, which is one component of children's motivational frameworks (e.g., Dweck & Bush, 1976; Meece, Glienke, & Burg, 2006; Mok, Kennedy, & Moore, 2011). Girls tend more than boys to attribute failures to lack of ability and thus show decreased persistence and motivation after failure (Dweck & Bush, 1976; Mok et al., 2011). This gender difference in children's attribution styles is especially pronounced in the math and science domains, which are gender-stereotyped in favor of males (Meece et al., 2006; Ryckman & Peckham, 1987; Stipek & Gralinski, 1991). Furthermore, previous research has found that teachers give different types of feedback to boys and girls in a way that promotes more adaptive attribution styles among boys than among girls (Dweck et al., 1978). These results are cause for concern because they suggest that parents and teachers may be inadvertently creating the mind-set among girls that traits are fixed, leading to decreased motivation and persistence in the face of challenges and setbacks.

One potentially counterintuitive result from this study was that parents' own incremental theories did not predict parents' use of process praise or children's motivational frameworks. Parents, it seems, may not know how to turn their incremental theories into the kind of praise that would foster incremental theories in their children. In fact, our data suggest that parents with stronger incremental theories were actually more likely to engage in *person* praise than parents with stronger entity theories. One can imagine a parent who believes that intelligence is malleable, but also believes that the way to make her child smarter is to increase the child's self-esteem by saying how smart he is (i.e., by using person praise). It is perhaps not surprising

that a more proximal measure of parent–child interactions, parents' praise, was a better predictor of children's motivational frameworks than a distal predictor, parents' own incremental theories. This finding is reminiscent of previous studies showing that children's attribution styles are not strongly related to parents' own attribution styles but are related to parents' specific attributions for events in their child's life (e.g., Alloy et al., 2001; Garber & Flynn, 2001).

This study has several limitations. One limitation of any observational study, including this study, is the possibility that parents could change their behavior because they are aware that they are being observed. If this were the case, however, we would still expect that the variability in parents' praise styles would be maintained, especially given that parents were not aware that praise would be studied. Another potential limitation is that our study had a moderate sample size (53 parent–child dyads) that was selected to represent the demographic range of the Chicago area in terms of income and race and ethnicity. Future work with larger samples in other geographic regions is needed to assess the generalizability of these results. Finally, although we attempted to rule out a number of confounding factors, it is possible that other unmeasured confounds could still explain the correlations between parents' use of process praise and children's motivational frameworks, such as parenting style or child temperament.

This study also raises a number of important questions that can be addressed in future research. First, our finding that parents' use of process praise predicted children's motivational frameworks does not preclude the possibility that other aspects of children's experiences may also influence their orientation toward an entity or incremental framework. Given that parent praise accounts for only 3% of all parent speech to children, it is likely that parents' use of other types of talk, such as using generic language to ascribe stable traits to individuals or groups (e.g., "girls are nice"), may also play a role in shaping children's motivational frameworks (Cimpian, 2010; Dweck et al., 1978; Mueller & Dweck, 1998). In addition, process and person praise from teachers, peers, and siblings, as well as adults' and peers' use of generic language to ascribe stable traits to groups (e.g., "girls are nice") or to other individuals, (e.g., "your sister is good at math") could also relate to children's development of motivational frameworks.

Second, our finding that parents' praise styles are consistent over time but also vary across parents raises the question of why some parents give more process or person praise than others. We found two factors that related to parents' praise style: Parents' incremental theory was associated with greater use of person praise, and parents of boys gave more process praise than parents of girls. However, more work is needed to fully understand these effects. For example, does the gender difference in parents' praise arise as a result of the child's gender per se, or do the activities that boys are more likely than girls to engage in also tend to elicit more process praise? It will be important in future research to investigate characteristics of the parent, child, and situation that lead parents to favor one type of praise over the other.

Third, future research should investigate the impact of parents' praise on children's actual behaviors, such as persistence on a difficult task. Given previous research showing that motivational frameworks predict behavioral outcomes, including motivation, persistence, and achievement (e.g., Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003; Mueller & Dweck, 1998), we expect that parents' praise would also predict children's behaviors. In future work, we would like to directly examine whether process praise predicts children's task persistence and achievement, as well as their motivational frameworks.

In summary, we found that parents' use of process praise at home with their toddlers predicted children's endorsement of an incremental framework 5 years later. These findings have important implications for parents and early childhood educators. In particular, praise that emphasizes children's effort, actions, and strategies may not only predict but also impact and shape the development of children's motivational frameworks in the cognitive and sociomoral domains. Previous interventions have focused on changing the beliefs about trait stability that have already formed among older students (Aronson et al., 2002; Blackwell et al., 2007; Good et al., 2003). However, our findings suggest that interventions targeting the quality of early praise may be able to instill in children the belief that people can change and that challenging tasks provide opportunities to learn.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix S1. Child Motivational Framework Questionnaire.