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The Effects of Person Versus Performance Praise on Children's Motivation: Gender and age as moderating factors

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Two studies were conducted to determine how gender and age moderate the long-term and post-failure motivational consequences of person versus performance praise. In Study 1, fourth- and fifth-grade students (n = 93) engaged in a puzzle task while receiving either no praise, person praise, product praise, or process praise. Following a subsequent failure experience, behavioural measures indicated that product and process praise enhanced motivation and person praise dampened motivation for girls, but that there were few effects of praise on subsequent motivation for boys. In Study 2, a parallel procedure with preschool children (n = 76) showed that person, product, and process praise all enhanced motivation, relative to neutral feedback, for both girls and boys.

> Unlike the old adage, a praise is not a praise is not a praise. (Parsons, Kaczala, & Meece, 1982, p. 336)

Conventional wisdom suggests that praise a powerful motivator, but the research literature is replete with contradictions about how it affects children's motivation and achievement. According to the applied behaviour analytic tradition, the systematic and contingent use of praise can effectively reduce classroom behaviour problems and encourage students to learn (e.g., Harris, Wolf, & Baer, 1967; Madsen, Becker, & Thomas, 1968; O'Leary & O'Leary, 1977). Because praise is rarely isolated as a single variable in this tradition, however, it is difficult to know whether positive effects are due to praise per se or to teacher attention, special privileges, or other components of the behavioural program (e.g., Brown & Elliott, 1965;

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Kastelen, Nickel, & McLaughlin, 1984; Kazdin, 1981; McAllister, Stachowiak, Baer, & Conderman, 1969; Ward & Baker, 1968). Nonetheless, research in this tradition suggests that praise certainly has the potential to function as a positive reinforcer. Perhaps because of the unsystematic way in which praise is typically delivered in classrooms, however, observational research has suggested that it is largely ineffective (see Beaman & Wheldall, 2000; Brophy, 1981). Moreover, research in the social-cognitive tradition has revealed several instances in which praise is not only ineffective but also dysfunctional (e.g., Barker & Graham, 1987; Birch, Marlin, & Rotter, 1984; Meyer et al., 1979; Mueller & Dweck, 1998). Clearly, then, some types of praise and some circumstances surrounding its delivery are better than others (Henderlong & Lepper, 2002).

One dimension of praise that may explain these opposing motivational consequences is whether praise is directed at the person or at some aspect of the person's performance, such as the final product or the process of engagement. Specifically, praising the particular work product or process (e.g., "What a wonderful oil painting"; "What a careful job you did") may be more beneficial to motivation than praising the person (e.g., "You're a wonderful artist"), as theorists have long argued (e.g., Ginott, 1965; Good & Brophy, 1984; Kanouse, Gumpert, & Canavan-Gumpert, 1981; Kohn, 1993) and some experimental evidence has suggested (Kamins & Dweck, 1999; Mueller & Dweck, 1998).

Although it may seem somewhat counter-intuitive, there are several grounds for this assertion. First, praise for a person is almost necessarily more general than praise for a performance, and thus there are more grounds for rejecting such praise (Kanouse et al., 1981; Kohn, 1993). In contrast, praise for a specific performance or product can only be rejected to the extent that the evaluation of the praiser is incorrect. More specific forms of praise—particularly process praise—may also be more motivating because they provide more detailed information about competence and effective problem-solving strategies that children can apply to similar situations in the future. Indeed, researchers working in the tradition of applied behaviour analysis have long argued that praise must be specific in order to function as an effective reinforcer (O'Leary & O'Leary, 1977).

Person praise may also foster a detrimental sense of contingent self-worth. Praising children for their personal attributes, rather than specific aspects of their performance, may teach them to make inferences about global goodness or worth based on performance (Kamins & Dweck, 1999; Kempner, McDonald, & Pomerantz, 2003). Such inferences may not be problematic if children only experience success. However, if children subsequently experience failure, then they may come to believe that they are incompetent, bad, or unworthy. To demonstrate this point, Kamins and Dweck (1999) used a series of role-play scenarios in which kindergarten children were told to imagine that their teacher responded to them with either person, outcome (product), or process praise for completing a task successfully. After subsequent failure scenarios, children who had been given person praise showed greater signs of helplessness than those given process praise, with children given product praise falling roughly in between. Thus, one might argue that a key

issue for praise research—and one goal of the present work—is to determine how the ways in which we praise children for their successes may have implications for how they later cope with failures.

Person and performance praise may also foster different attributional styles (Mueller & Dweck, 1998). That is, person praise may encourage stable ability attributions which can foster helpless reactions in the face of failure, while performance praise—particularly process-oriented praise—may lead to more effort or strategy attributions which can foster adaptive reactions in both success and failure situations. Indeed, Mueller and Dweck (1998) found that fifth-grade students who were praised and then subsequently experienced failure made more attributions to lack of ability when praise statements had focused on intelligence (one type of person praise) as opposed to effort (one type of process praise).

These studies support what theorists and educators have been espousing for decades: praise the deed and not the doer. However, this conclusion is based on only two experimental studies (i.e., Kamins & Dweck, 1999; Mueller & Dweck, 1998), both from the same laboratory, and both lacking a no-praise control condition that would indicate the effects of praise relative to some neutral baseline. It remains unclear, therefore, whether person praise is truly detrimental to motivation, or whether process praise is truly beneficial to motivation, or both. Thus, further investigation with additional controls is necessary. Additionally, there may be boundary conditions and moderator variables that would limit the generalisability of this basic finding. Specifically, the existing praise literature suggests that both gender and age may be important moderators, neither of which has been systematically examined with respect to the person–performance dimension.

Gender as a Moderator

Several theoretical frameworks suggest that girls may be particularly susceptible to the proposed negative effects of person praise following subsequent failure. First, research has consistently shown that females are more negatively affected than males by praise that diminishes perceived autonomy (e.g., Deci, 1972; Kast & Connor, 1988; Koestner, Zuckerman, & Koestner, 1989; Zinser, Young, & King, 1982). Deci and Ryan (Deci, 1975; Deci & Ryan, 1980) have explained this pattern of results in terms of traditional socialisation practices, which tend to focus on dependence and interpersonal relationships for females, but independence and achievement for males. Thus, while praise may highlight external evaluation and dampen autonomy for females, it tends either to enhance feelings of competence or to be ignored by males, who presumably have developed more internal standards of excellence.

In a somewhat similar vein, Roberts (1991) has found that women tend to be more influenced by evaluative feedback than men. While women see evaluative feedback as an accurate reflection of their abilities, men rely more on their own internal standards and tend to discount the evaluative opinions of others, especially with respect to negative feedback. One of the most compelling explanations that Roberts offers for this difference centres around the contrasting experiences that men and

women have with evaluative feedback throughout their lives. For example, teachers tend to give boys more negative feedback than girls (Burnett, 2002), especially for non-intellectual matters such as messy papers or unruly behaviour (Dweck, Davidson, Nelson, & Enna, 1978). Conversely, teachers tend to praise boys almost exclusively for matters of intellectual substance, but to praise girls for good behaviour and hard work as well (Dweck et al., 1978). Over time, then, negative feedback may be seen as frequent and irrelevant to ability for boys, but rare and relevant to ability for girls. These gender-specific experiences may impact how person and performance praise affect coping with subsequent failure.

The few studies that have examined how gender moderates the effects of feedback along the person–performance dimension support these theories. For example, Kempner et al. (2003) found that mothers' use of person praise in everyday interactions with their elementary-school children predicted feelings of contingent self-worth for their daughters but not their sons. Similarly, using an experimental paradigm, Koestner et al. (1989) found that fifth- and sixth-grade girls were more motivated by effort than ability praise, whereas boys showed the opposite pattern of results. Koestner et al. argued that girls may be more comfortable with effort praise whereas boys may be more comfortable with ability praise because of the way feedback is typically given in the classroom (see also Burnett, 2002). It is important to note, however, that the Koestner et al. study involved only a success experience. Thus, it is unclear how children would have responded and what role gender might have played if they had experienced failure on subsequent puzzles. Nonetheless, it suggests that gender may be an important moderator of the motivational consequences of person versus performance praise, especially for older children who have spent substantial time in classrooms and may have learned such gender-specific patterns of feedback.

Age as a Moderator

Another potentially important and relatively unexplored moderator is age. Specifically, the potentially detrimental effects of person praise may not obtain with younger children who do not use causal attributions in complex ways when reasoning about achievement (Barker & Graham, 1987; Covington, 1984; Harari & Covington, 1981; Karniol & Ross, 1979; Miller & Hom, 1997; Nicholls, 1978), and who tend to have a literal bias when interpreting adult utterances (Ackerman, 1981; Winner, 1988). Young children may simply lack the cognitive sophistication to translate what they have learned in a situation of success to a situation of failure.

Although there has not yet been a systematic investigation of developmental differences along the person–performance dimension, Kamins and Dweck (1999) found that even kindergarten children show motivational benefits from process praise relative to person praise. Because this study did not include a neutral control condition, however, it only provides information about the relative effects of person and process praise, not the absolute effects, which may show a different pattern in younger versus older children. Additionally, further research with young children is needed because this study examined only a role-playing context. One might imagine,

for example, that these effects could vary as a function of competing demands on cognitive resources, or as a function of how much ownership children feel over their work product, both of which would differ in role-play versus real-life situations.

The goal of the present research was, therefore, to examine the post-failure and long-term consequences of praising the person, the product, or the process—relative to providing neutral but informative feedback—for both upper-elementary and preschool boys and girls. We sought not only to investigate the effects of person versus performance praise, but also to extend this work by examining the role of gender and age as moderating variables. For upper-elementary children, the central hypothesis was that person praise would undermine motivation but performance praise, particularly process praise, would enhance motivation once children were confronted with a challenging experience in the praised domain. For preschool children, however, person, product, and process praise were all expected to enhance motivation relative to neutral feedback. We anticipated that gender would moderate these effects for upper-elementary children, who have spent significant time in typical classrooms observing gender-specific patterns of feedback. Specifically, we predicted that girls would be particularly susceptible to the negative effects of person praise and that boys would either be motivated by person praise or unaffected by the evaluative feedback in general.

Although the goals of this research might be addressed best through a 4 (feedback condition: person, product, process, neutral) × 2 (gender) × 2 (age: upper-elementary, preschool) between-subjects design, age-appropriate modifications were necessary to make the procedure accessible for preschool children. Therefore, Study 1 focused on upper-elementary children and Study 2 focused on preschool children. Gender was included as a variable in both studies, but it was expected only to play a role in Study 1 with upper-elementary children.

Study 1

Fourth- and fifth-grade children received either person praise, product praise, process praise, or neutral feedback for their performance on a puzzle task. Following a subsequent failure experience, both self-report and behavioural dependent measures were collected, with a primary emphasis on behavioural measures because they are thought to be more ecologically valid, particularly in research with children (see Quattrone, 1985). These measures were collected following the failure experience and again several weeks after the praise induction, because theories of helplessness and intrinsic motivation suggest that this may be a critical test of the true motivational properties of person, product, and process praise.

Method

Participants.   The sample included 93 fourth- and fifth-grade children with roughly equal numbers of girls ($n = 44$) and boys ($n = 49$). Recruitment took place through two American elementary schools in the San Francisco Bay area. All children at the

appropriate grade levels were invited to participate. They were largely Caucasian, Asian-American, and Latino.

Measures.   A number of measures were used—see below.

  Experimental task. All children worked on a series of intrinsically interesting tangram puzzles, which consisted of geometric forms that had to be constructed from a set of seven smaller shapes. Children were given two sets of geometric forms to complete. The first set of puzzles was selected to be moderately easy for children to solve, in order to create a success experience during which children could be praised according to their experimentally assigned conditions. The second set of puzzles was selected to be extremely difficult, in order to create a failure experience.

  Self-reported motivation.   Three short questionnaire items were used to assess children's immediate motivation for tangram puzzles, both after the success experience and after the failure experience. Specifically, we asked children to rate their liking for the task, desire to continue working on the task, and perceived competence, using six-point Likert scales, anchored with "Not at all" and "Very much" for the first two items, and "Terrible" and "Great" for the third item. Because these items were significantly inter-correlated following both the success and failure experiences ($r = .32, .37$, respectively), they were combined to form a single composite index of reported motivation. In addition, children were asked to make attributions for their poor performance during the failure experience by rank ordering several explanations provided by the experimenter: lack of effort ("I didn't try hard enough"), lack of ability ("I'm not good enough at these puzzles"; "I'm not smart enough"), and lack of time ("I ran out of time"). There were two lack-of-ability statements in order to increase the acceptability of this choice, and they were averaged together to create a single indicator of attributions to lack of ability. Consistent with previous research, the lack-of-time choice was included as a filler item.

  Behavioural and long-term motivation. There were two primary behavioural measures of motivation: free-choice behaviour and tangram gift choice. For free-choice behaviour, children were seated at an activity table and told that they could play with whatever they liked for five minutes. The table comprised an art activity, crossword puzzles, children's magazines, a geoboard, and three sets of tangrams of varying difficulty levels. Children's time spent engaging with tangrams was surreptitiously observed as an indicator of free-choice motivation. Both short- and long-term motivation were also assessed behaviourally by offering children the opportunity to take home a personal tangram set. Children were presented with six attractive gifts and asked to rank order the items according to their personal preferences. The gifts included a tangram set, dominoes, pick-up sticks, rebus puzzles, fancy pencils, and a set of stencils. They were told that the gifts would be delivered once all students at

their school had participated. Several weeks later, the experimenter returned—ostensibly having "misplaced" the gift-choice rankings—and children were asked to rank order the six gift items once again. Importantly, they were instructed to rank their current preferences without regard to their original rankings.

Manipulation check.   At the end of the procedure, children were asked to recall what the experimenter had said to them as they were working on the first set of puzzles.

Procedure.   Children were randomly assigned, within sex, to one of four conditions: person praise ($n = 25$), product praise ($n = 22$), c), process praise ($n = 24$), or neutral feedback ($n = 22$). Aside from the feedback statements, all other aspects of the study were the same for all participants. Children were individually tested in a quiet room on their school property by one of five female experimenters (E1), each of whom was blind to the hypotheses of the study. A second female experimenter (E2), who was blind to condition, remained in the room (wearing headphones during the success and failure phases) and administered the measures after the failure phase.

Success phase.   E1 introduced the first set of puzzles and explained that children would have six minutes to do as many puzzles as possible. Throughout this period, children were given feedback according to their experimental condition for approximately every other tangram they completed. Praise statements for children in the person condition consisted of the following phrases: "You're really good at this!"; "You must be good at puzzles!"; "What a good puzzle-solver you are!"; and "You have a great puzzle-solving ability!" Praise statements for children in the product condition consisted of the following phrases: "Nice job on that one!"; "You're really arranging the pieces the right way!"; "You're solving a lot of these!"; and "That's the right solution again!" Finally, praise statements for children in the process condition consisted of the following phrases: "You're really thinking!"; "You're using good puzzle-solving strategies!"; "You must be concentrating hard!"; and "You must be working hard!" Children in the neutral feedback condition were given a positive-sounding "OK" at these same time points.

Once six minutes had passed, children were told to stop working and their performance was evaluated. E1 counted the number of tangrams completed and said, "You finished [number of] tangrams." She then examined a mock scoring grid—presumably to determine the child's score—before saying, "That gives you a score of 90%." In addition, children in the three praise conditions were told, "Wow! That's a really high score," followed by a statement consistent with either person ("You must be really good at puzzles"), product ("You really got the pieces in the right places"), or process ("You must have been really concentrating") praise. It is important to note that these praise statements were extensively pre-tested to ensure that they were

as equally positive, effusive, and informative as possible.[1] Children were then asked to complete the self-reported motivation measure. Before handing this sheet to the children, E1 wrote their names and scores (90%) at the top of the page, along with a brief statement consistent with their praise condition (i.e., "Good at puzzles," "Solved the right way," or "Concentrated hard").

Failure phase.   Children were asked to work on a second set of tangrams for an additional six minutes. As they worked on these more difficult puzzles, children were not given praise, but rather were given a neutral-sounding "OK" upon completion of each tangram puzzle. At the end of the six-minute period, children were told to stop working and their performance was evaluated. E1 counted the number of tangrams completed and said, "You finished [number of] tangrams." She then examined the mock scoring grid before saying, "That gives you a score of 60%. That's not a very good score." E1 then asked children to complete the self-reported motivation measure, and then administered the measure of attributions for failure.

Finally, E1 explained to the children that E2 needed to ask them some final questions. E1 approached E2, but quickly "discovered" that E2 was immersed in work and could not talk with the children for several more minutes. Before making an excuse to leave the room, E1 told the children that they could work at an activity table while they were waiting for E2 to finish her work. Following the five-minute free-choice period, E2 called children away from the activity table and administered the gift-choice measure and the manipulation check. E2 then carefully debriefed children by explaining that the second set of puzzles was designed for much older, seventh- or eighth-grade students, so that poor performance was due to an extremely difficult task. E2 emphasised that completing even one of these puzzles was a great accomplishment for a fourth- or fifth-grade student. This debriefing did not reveal that we were interested in children's reactions to praise, but focused instead on ensuring that all children left the procedure feeling good about their performance. Finally, all children were instructed not to discuss the procedure with other fourth- and fifth-grade students, thanked, and sent back to their classrooms. The entire procedure lasted approximately 30 minutes. Finally, several weeks later (median = three weeks), E2 returned to the children's classrooms and collected their final gift choices.

Results

A series of 4 × 2 (feedback condition × gender) analyses of variance (ANOVAs) were used to examine children's responses to the self-reported and behavioural dependent measures of motivation.

Manipulation check.   Children's open-ended responses were coded on a scale from 0 (no memory at all) to 2 (memory such that a blind rater could confidently guess the praise condition). In general, children were quite good at remembering precisely the

types of things E1 had said to them, and demonstrated near-ceiling performance in all three of the praise conditions (person praise: $M = 1.80$, $SD = .41$; product praise: $M = 1.76$, $SD = .44$; process praise: $M = 1.96$, $SD = .20$).

Self-reported motivation.   Following the success phase, there was a statistically significant main effect for gender on self-reported motivation ($F[1,85] = 7.01$, $p < .05$, partial $\eta^2 = .08$), but the condition by gender interaction was not significant ($F[3,85] = .18$, ns). Specifically, girls ($M = 5.17$, $SD = .55$) reported greater levels of post-success motivation than boys ($M = 4.82$, $SD = .69$). Following the failure phase, there were no significant main effects or interactions (all Fs < 1.3, ns). In addition, there were no significant main effects or interactions for children's attributions for failure (all Fs < 1.5, ns), though the pattern of means was consistent with predictions in that girls, but not boys, showed the most adaptive attributions in the process condition.

Behavioural and long-term motivation measures.   For free-choice behaviour at the activity table, there were no significant main effects or interactions (all Fs < 1.9, ns). In terms of the tangram gift choice, the predicted condition by gender interaction was statistically significant ($F[3,85] = 3.58$, $p < .05$, partial $\eta^2 = .11$), as presented in Figure 1. As predicted, girls showed the greatest preference for tangrams in the product ($M = 5.17$, $SD = .94$) and process ($M = 5.08$, $SD = .90$) conditions, followed by the neutral feedback ($M = 4.63$, $SD = 1.51$) and person ($M = 3.58$, $SD = 1.78$) conditions. A one-way ANOVA for the girls indicated a statistically significant main effect of condition ($F[3,40] = 3.66$, $p < .05$, partial $\eta^2 = .22$), and Tukey tests indicated significant ($p < .05$) pairwise differences between the person condition and both the product and process conditions. There was no effect of condition for boys ($F[3,45] = .70$, ns).

This condition by gender interaction was maintained several weeks later when children made a final selection of a take-home gift ($F[3,84] = 2.94$, $p < .05$, partial $\eta^2 = .10$). Once again, girls showed the greatest preference for tangrams in the product ($M = 5.17$, $SD = 1.19$) and process ($M = 4.83$, $SD = 1.11$) conditions, followed by the neutral feedback ($M = 3.71$, $SD = 1.80$) and person ($M = 3.5$, $SD = 1.62$) conditions ($F[3,39] = 3.73$, $p < .05$, partial $\eta^2 = .22$). There was no effect of condition for boys ($F[3,45] = .37$, ns).

Discussion

The results of Study 1 suggest that performance versus person praise can have important and somewhat opposing effects on intrinsic motivation for girls and for boys. Specifically, girls, but not boys, showed enhanced intrinsic motivation when given product and process praise, but dampened motivation when given person praise. Indeed, a full 22% of the variance in girls' tangram gift choices was explained by the feedback they received for their successful performance at the beginning of
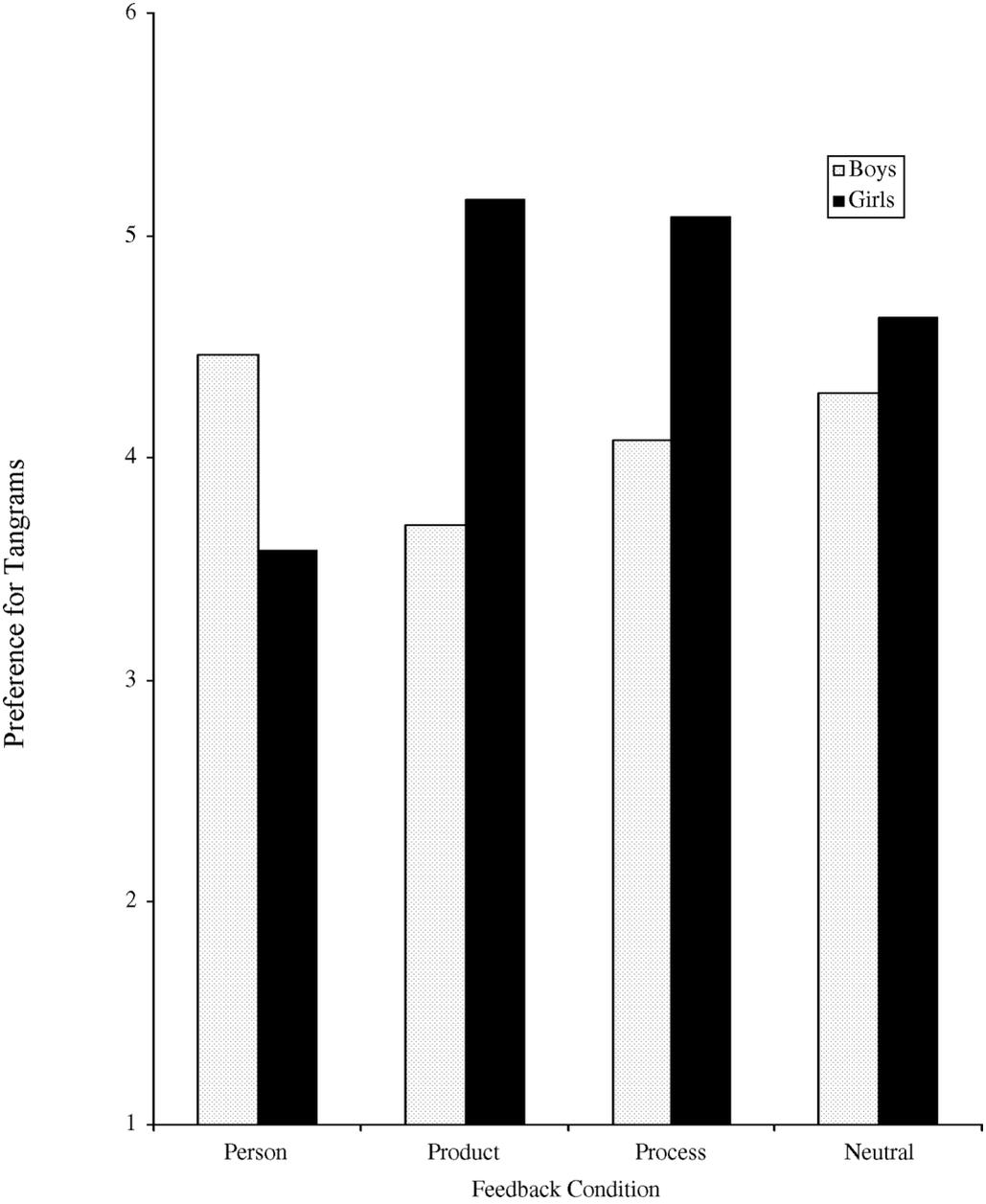
Figure 1.   Preference for tangrams, by feedback condition and gender, Study 1

the experimental session. Based on the size of this effect, one might imagine that a teacher choosing to use process rather than person praise on a regular basis could engender a substantial motivational benefit for her female students. Of course, it is important to remember that the sample used in the present study was relatively small; perhaps with a larger sample, praise might also impact the motivation of boys,

but simply to a lesser extent than in girls. One would certainly not want to conclude that praise is ineffective for boys on the basis of the present research.

Although the data in the present study do not illuminate the mechanism driving these gender differences, previous research has suggested that differing socialisation practices or familiarity with specific types of feedback may account for the effects (e.g., Deci & Ryan, 1985; Dweck & Bush, 1976; Dweck et al., 1978; Kast & Connor, 1988; Koestner et al., 1989). Although boys clearly listened to the praise statements well enough to pass the manipulation check, they may not have processed and internalised them to the same extent as the interpersonally aware girls. Subsequently, when faced with failure, girls may have taken to heart the implications of the praise they had been given, while boys may have acted more in accord with their own internal standards of interest and evaluation. Indeed, the literature is replete with evidence that failure experiences tend to be more debilitating for girls than for boys (e.g., Dweck & Reppucci, 1973; Nicholls, 1975).

Another explanation for the gender differences observed in the present study is that tangrams can be classified as a mathematical task—a domain in which psychological studies often reveal gender differences. Indeed, the one other study that found gender differences in children's reactions to effort versus ability praise used a puzzle task that was explicitly described as related to mathematics (Koestner et al., 1989). In both the present study and that of Koestner and colleagues, ability-oriented praise may have activated the cultural stereotype that females are deficient in maths, leaving girls, but not boys, vulnerable to low-ability inferences and dampened motivation in the face of failure (see Steele, 1997). Thus, future work is needed to determine the generalisability of these findings to other less gender-stereotyped domains.

Although the predicted condition by gender interaction was significant for the gift choice measures, it was not significant for children's free-choice behaviour at the activity table. Perhaps children were more interested in engaging with the other attractive items at the table than the tangrams they had been working with throughout the first half of the procedure. Because the gift choice measures represented an opportunity for more delayed engagement with the task, they were not subject to the same satiation that may have interfered with the earlier measure. Feedback also had no effect on children's self-reported motivation, but this was not particularly surprising because experimental manipulations in the self-perception literature tend to show significant effects on behavioural measures, but often not on self-report measures—especially in research with children (Quattrone, 1985). It was surprising, however, that there was no effect of feedback on children's attributions for failure. We had expected that, at least for girls, process praise would lead children to attribute failures to lack of effort more than lack of ability (cf. Mueller & Dweck, 1998). Although the means were in the predicted direction, the effect was not significant, perhaps because of a relatively small sample size and an accompanying lack of statistical power. Future researchers might attempt to replicate the present study with a larger sample and perhaps a more fine-grained measure of attributions (see Nicholls, 1975).

Study 1 highlights the importance of gender in attempting to understand the complex effects of praise on children's motivation. As discussed earlier, previous research suggests that age may also be an important moderator of the effects of praise on children's motivation. This possibility was the focus of Study 2.

Study 2

The detrimental effects of praise may not obtain with younger children, who tend to have a literal bias when interpreting adult utterances. Because Study 1 suggested that praise can have both beneficial and detrimental effects on children's motivation, one goal of Study 2 was to document the ages for which these effects would obtain. To this end, Study 2 investigated the effects of person, product, and process praise in preschool children. The central hypothesis was that all forms of praise—person, product, and process—would generally be beneficial for the preschoolers, relative to neutral feedback. We did not anticipate gender differences because preschool children lack familiarity with the kind of classroom feedback typically given to girls versus boys that may lead them to interpret and respond to feedback in different ways. Moreover, even if preschool children were familiar with typical patterns of feedback, they may simply lack the cognitive sophistication necessary to make inferences about ability based on how a current statement of feedback fits in with the type of feedback typically given (Nicholls, 1978). They are also less likely than older children to have had exposure to the gender-specific socialisation practices that may lead girls, but not boys, to be particularly interpersonally aware and sensitive to the effects of different types of praise.

Method

Participants.   The sample included 76 four- and five-year-old children (mean age = 5 years, 0 months) from a university-affiliated laboratory nursery school in the San Francisco Bay area. There were approximately equal numbers of girls (n = 39) and boys (n = 37). Children were largely Caucasian, Asian-American, and Latino.

Measures.   A number of measures were used—see below.

Experimental task. All children worked on a series of four interesting jigsaw puzzles. The first two puzzles were designed to create a success experience and were moderately easy for preschoolers to solve. The last two puzzles were designed to create a failure experience and were made impossible to solve by replacing the correct puzzle pieces with incorrect but highly similar puzzle pieces.

Self-report measures. Children were asked to indicate how much they enjoyed working on the task by pointing on a scale of five schematic faces ranging from a

frowning face to a smiling face. Next, perceived competence was measured by children's responses to the question, "Are you good at these kinds of puzzles or not so good at these kinds of puzzles?" Finally, attributions for failure were measured by children's responses to the question, "Did you have trouble on the second puzzles because you didn't try hard enough or because you aren't good enough at these kinds of puzzles?" The order of the two choices was counterbalanced across participants.

Behavioural measures of subsequent motivation. As in Study 1, there were two primary behavioural measures of motivation: immediate free-choice behaviour and long-term motivation. For free-choice behaviour, children were seated at an activity table and told that they could play with whatever they liked for two minutes. The table comprised an art activity, building blocks, and two jigsaw puzzles. E2 surreptitiously observed how long children spent engaging with each activity. More importantly, children's long-term motivation was assessed several weeks later by observations of their behaviour when the puzzles were available as an activity in their regular classrooms. The puzzles were placed in the classroom before the daily session began and children were observed through a one-way mirror by an individual who was blind to children's experimental condition. The observer noted whether or not children approached the puzzles and timed how long they spent engaging with them.

Memory manipulation check. Children in the three praise conditions were questioned about the content of the praise they were given when they successfully solved the first two puzzles, in order to provide a check that they were paying attention and remembering what was said to them during the success phase. E2 gave children four forced-choice questions that paired an example of the type of praise they were actually given with an example of another type of praise. For example, children in the person condition were asked whether they were told, "You are a great puzzle-solver" or "You are really thinking"; next, they were asked whether they were told, "Good job on that one" or "You are good at puzzles"; and so on. The order of the two choices was counterbalanced across participants, as was the order of the four questions.

Procedure. Children were randomly assigned to one of the following four feedback conditions: person praise ($n = 20$), product praise ($n = 20$), process praise ($n = 20$), or neutral feedback ($n = 16$). Aside from the feedback statements, all other aspects of the study were the same for all participants and largely paralleled the procedure from Study 1.

Children were individually tested in a quiet laboratory room by two of five female experimenters. In all cases, the primary experimenter who delivered the feedback statements (E1) was blind to the hypotheses of the study. In 37% of the cases, the

secondary experimenter (E2) was also blind to the hypotheses of the study. At the beginning of the session, children were seated across a table from E1 while E2 sat quietly in the corner.

Success phase. E1 explained that she had some puzzles for children to work on and that they would be allowed to work until "time is up," so that the somewhat evaluative nature of the situation was clear. As children worked on the two success puzzles, they were praised three times—once after completing the first puzzle, once during the second puzzle, and once after completing the second puzzle. Praise statements for children in the person condition consisted of the following phrases: "You're really good at this!"; "You must be good at puzzles!"; and "You are a great puzzle-solver!" Praise statements in the product condition consisted of the following phrases: "Good job on that one!"; "You're getting a lot of pieces!"; and "You finished one again!" Finally, praise statements in the process condition consisted of the following phrases: "You must be working hard!"; "You're really thinking!"; and "You're finding really good ways to do this!" As in Study 1, children in the neutral feedback condition were given a positive-sounding "OK" at these same time points.

Once children completed both puzzles, they were told, "Time is up. You finished both puzzles. That means you get a star by your name." For children in the praise conditions, E1 continued by saying, "Wow! That's really good," followed by a statement consistent with either person ("You must be really good at puzzles"), product ("You really finished a lot of puzzles"), or process ("You must have been really thinking") praise. Following the feedback statement, children were asked to indicate their liking for the task, as described above.

Failure phase. E1 then explained to the children that she had some more puzzles for them to work on. They were reminded that, once again, they could work until "time is up." Children unsuccessfully worked on the first failure puzzle for 75 seconds before E1 said, "Let's move on to the next one." She handed children the second failure puzzle and allowed them to work for 75 seconds before delivering the failure feedback: "Time is up. You didn't finish the puzzles. That won't get you a star." At this point, E1 administered the measures of task liking, perceived competence, and attributions for failure. Finally, E1 explained that she had to leave briefly because she accidentally had left the next set of puzzles in the other room. Before she left, she instructed children to sit at the activity table and to play with anything they liked. E1 left the room and E2 observed as children played at the activity table. When two minutes had passed, E2 asked children to return to the original table and administered the memory manipulation check.

At this point, E1 returned to the room, apologising and explaining that she had accidentally mixed up the puzzle pieces, making the last two puzzles impossible to solve. E1 gave children one of the "failure" puzzles to try again, now that she had corrected her mistake. Once children completed this now easily solvable puzzle, E1 placed another star on the child's name tag in order to ensure that all children

left the procedure feeling good about their performance in the study. Children were then thanked and returned to their classrooms. The entire procedure lasted approximately 15 minutes. Finally, one to three weeks later, the puzzles were available as an activity in children's regular classrooms, as described above.

Results

Each of the dependent measures was analysed with a 4 × 2 (feedback condition × gender) ANOVA. There were no interactions between feedback and gender for any of the dependent variables; therefore, data for boys and girls were collapsed and one-way ANOVAs with four levels (person praise, product praise, process praise, and neutral feedback) were conducted. When significant, these general analyses were followed by a series of planned contrasts that compared the three praise conditions to the neutral feedback condition in order to test the hypothesis that all types of praise would enhance motivation for young children.

Manipulation check. Children's responses to the forced-choice manipulation check were analysed to determine whether they were paying attention and remembering what was said to them during the success phase. In order to pass the manipulation check successfully, children had to respond correctly to at least three out of the four questions. Of the 60 children who were assigned to one of the three praise conditions, 38 successfully met this standard (n_{person} = 11, $n_{product}$ = 11, $n_{process}$ = 16). All analyses that follow are from this subset of children who passed the manipulation check, as well as the 16 children in the neutral feedback condition, but it should be noted that the pattern of results and levels of significance were similar when all children were included in the analyses.

Self-report measures. Both post-success and post-failure ratings of task liking were quite high (M = 4.46, SD = .97 and M = 4.06, SD = 1.24, respectively), and there were no significant differences between feedback conditions in liking for the task following either the success phase ($F[3,50]$ = .81, ns) or the failure phase ($F[3,50]$ = 1.92, ns). Responses to the question about perceived competence were coded as either 0 (not good at puzzles), 1 (sort of good at puzzles), or 2 (good at puzzles); there was no significant effect of condition ($F[3,48]$ = 1.57, ns). Finally, children's attributions for failure were coded as either 0 (lack of ability) or 1 (lack of effort). As expected, there were no significant differences between conditions ($F[3,48]$ = .49, ns), and in general children were slightly more likely to attribute failures to lack of ability than to lack of effort (M = .42, SD = .50).

Behavioural measures of subsequent motivation. The first behavioural measure of motivation was the time children spent engaging with the puzzles during the free-choice period; similar to Study 1, there was no significant effect of condition on free-choice

behaviour (F[3,50] = 2.73, ns). A second, and more ecologically valid, measure of motivation was the time children spent engaging with the puzzles several weeks later in their regular classrooms. Because this measure was collected several days to weeks after the experimental procedure (median delay = 10 days), some children were unavailable for observation. Thus, these data are based on 48 children (n_{person} = 11, $n_{product}$ = 10, $n_{process}$ = 13, $n_{neutral}$ = 14) rather than all 54 children.

First, we used logistic regression to analyse the proportion of children in each feedback condition who chose to approach and engage with the puzzles, as shown in Figure 2. As predicted, there was a statistically significant overall effect of condition (Wald χ^2 [df = 3, n = 48] = 8.32, p < .05), and a statistically significant effect when the three praise conditions were compared to the neutral feedback condition (Wald χ^2 [df = 1, n = 48] = 5.84, p < .05, odds ratio = .13).

Second, we analysed the amount of time children spent engaging with the puzzles in their regular classrooms, as shown in Figure 3. A log transformation (Y^1 = ln [Y + 1]) was performed on these data because the variances were unequal, and the standard deviations of the feedback conditions were proportional to the means. There was a statistically significant overall effect of feedback condition on these transformed time data (F[3,44] = 3.80, p < .05, partial η^2= .21), and a statistically significant effect when the three praise conditions were compared to the neutral feedback condition (t[44] = 2.88, p < .01).

Comparison of Studies 1 and 2.   Taken together, the results of Studies 1 and 2 suggest that there may be developmental changes in the effects of praise on children's motivation. In order to test this more directly, we standardised and then combined the central behavioural measures of intrinsic motivation from Studies 1 and 2 for use in a single analysis. Specifically, we converted children's immediate gift choices from Study 1 and their transformed time spent with puzzles in the classroom from Study 2 separately into z scores, and subsequently combined them to form a single general measure of motivation that was analysed with a 4 × 2 × 2 (feedback condition × age × gender) ANOVA. As we would have predicted, there was a statistically significant three-way interaction (F[3,125] = 2.80, p < .05, partial η^2 = .06), providing statistical support for the contention that both age and gender moderate the effects of praise on children's motivation. That is, although all types of praise were generally beneficial to motivation for young children, person praise tended to undermine—and product and process praise tended to enhance—the motivation of older girls, but not boys.

Discussion

To summarise the results of Study 2, there were negligible effects of feedback condition on the immediate measures of children's motivation, but strong effects on children's long-term motivation assessed days to weeks after the experimental procedure. As predicted, children's subsequent engagement with the puzzles in their
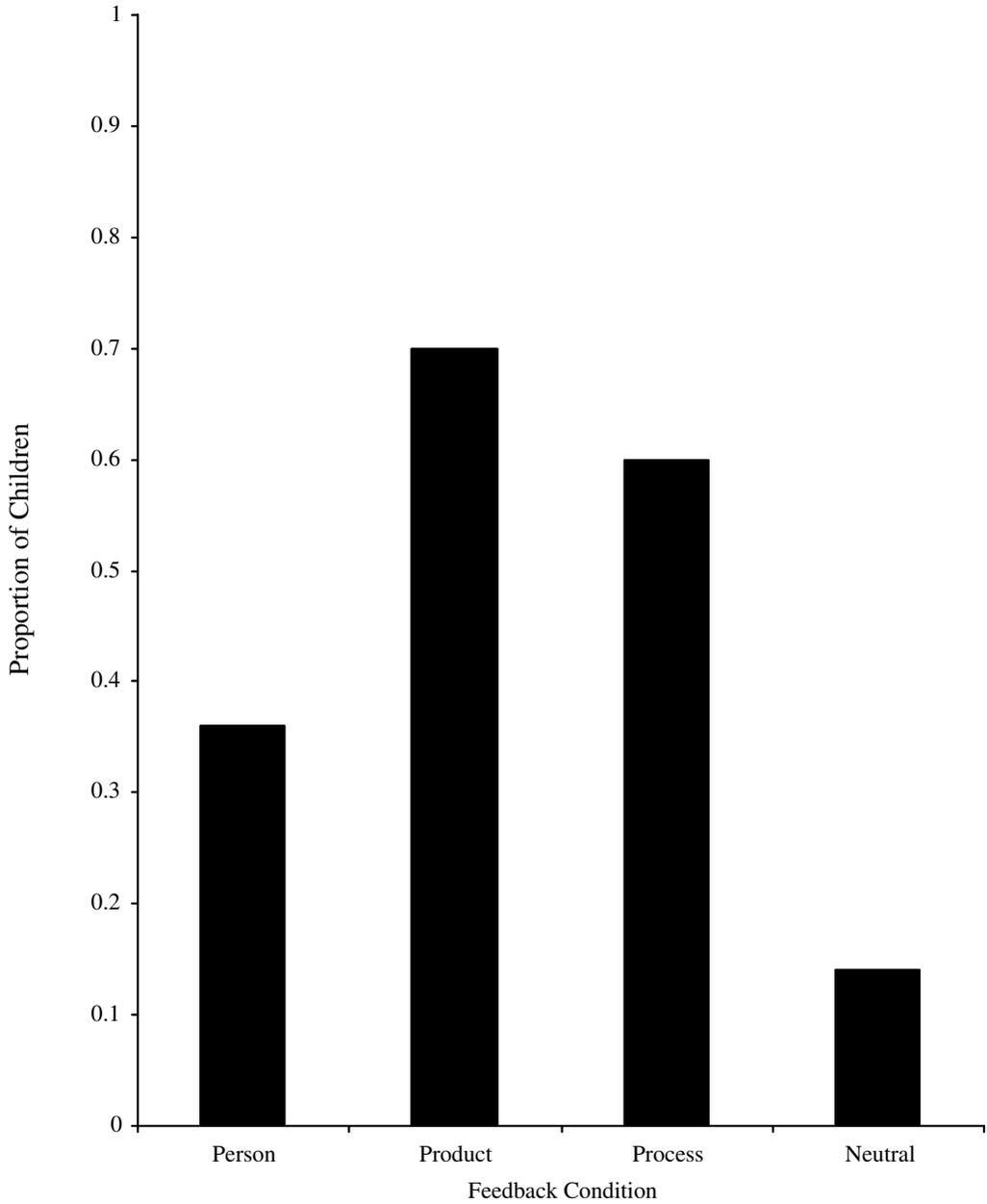
Figure 2.   Proportion of children engaging with the puzzles during subsequent classroom
observation period, by feedback condition, Study 2

regular classrooms showed that all types of praise were highly motivating for young
children, relative to neutral feedback. Indeed, the type of feedback children received
explained 21% of the variance in the time they spent with the puzzles in their regular
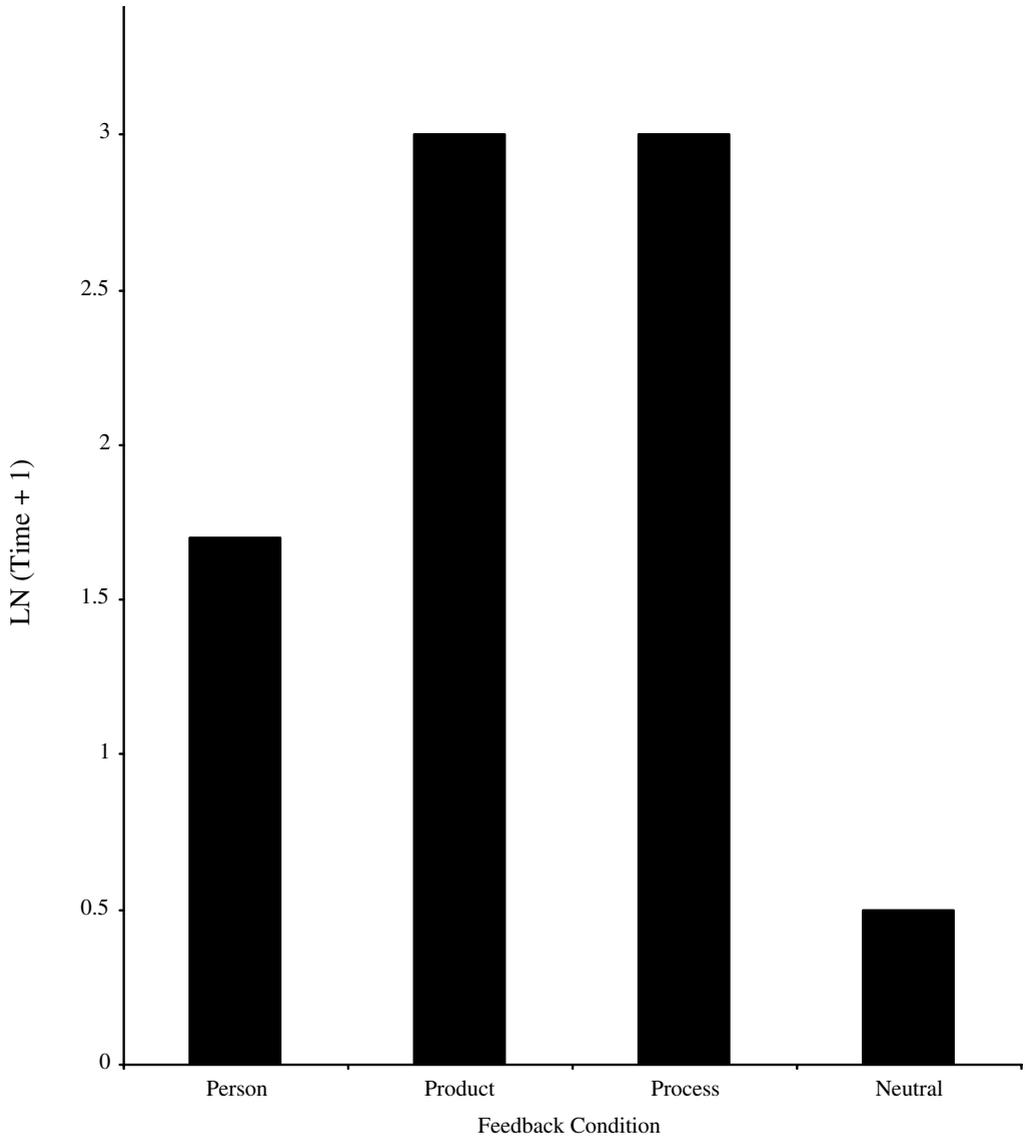classrooms. Compounded over multiple occasions in a classroom, praising preschool

Figure 3.   Amount of time spent with puzzles during subsequent classroom observation period, by feedback condition, Study 2

children would arguably have real-world benefits for intrinsic motivation, regardless of whether the praise statements focused on traits, products, or processes.

These results qualify the research of Kamins and Dweck (1999), who showed process praise to be motivationally superior to person praise for kindergarten children, but did not provide information about these effects relative to a neutral baseline. By including a neutral feedback control condition, the present study showed that person praise appears not to have an undermining effect for young children. Indeed, praise

of all types produced motivation that was equal to or better than neutral feedback. It is interesting to note, however, that children in the person condition did not show enhanced motivation to the same degree as children in the product and process conditions. This finding invites replication with larger sample sizes and with additional age groups, in order to determine when the potentially negative effects of person praise may emerge, and at what point gender becomes an important moderator.

Similarly to Study 1, Study 2 found no effect of feedback on preschoolers' self-reported motivation or their free-choice behaviour at the activity table. It is likely that, as in Study 1, satiation played a role in the lack of significant results for the measure of free-choice motivation. After two success puzzles and two failure puzzles, children most likely were more interested in the other attractive alternatives at the activity table than the highly similar puzzles. The long-term motivation measure taken in children's classrooms is not subject to the same criticism. Not only was this measure delayed and behavioural in nature, but it was taken in an unobtrusive manner that eliminated expectancy effects. Because motivation was assessed while children were in their regular classrooms, the long-term measure also provides information about the generalisability of the phenomenon to new-but-related settings. Thus, it is our belief that the long-term measure of motivation provides evidence that all types of praise—person, product, and process—may enhance motivation for young children, relative to neutral feedback. Compared with the results of Study 1, these results suggest that there may indeed be important developmental differences in the motivational consequences of praise.

Conclusions

Overall, the present research suggests not only that the person–performance dimension is a meaningful one, but also that it is important to consider individual differences, such as gender and age, when examining the motivational consequences of praise. While person, product, and process praise all had beneficial effects on motivation for preschool children, process and product praise had particularly beneficial effects, and person praise had potentially harmful effects, for upper-elementary school girls. Indeed, when data from the two studies were combined into a single analysis, the three-way interaction among condition, gender, and age explained 6% of the variance in children's motivation. This is a small effect in absolute terms, but it could be of practical educational significance, especially when considering that teachers administer feedback to their students on multiple occasions over the course of an academic year.

It is important, however, that the present findings not be overgeneralised. At the most basic level, our sample size was relatively small; given the number of variables tested, there were only approximately 10 participants per cell for several of the analyses. Thus, caution should be exercised when interpreting these results and generalising them to applied settings. At a broader level, the findings of the present research may be specific to children from the United States or other Western cultures. In Japanese and Chinese classrooms, for example, children may respond

differently to praise because of the cultural belief that achievement hinges primarily on effort (e.g., Lewis, 1995; Salili, 1996; cf. Henderlong & Lepper, 2002). In these more collectivist cultures, person praise would probably be given fairly infrequently and perhaps it would not have the same potential for detrimental effects. Future work should investigate the dimensions of person versus performance praise with larger samples and among children from a broader range of cultural backgrounds.

Notwithstanding these limitations, the present research suggests that praise linking children's performances to their personal traits should be used only with caution because of the vulnerability it may create when children are subsequently faced with challenging experiences. Praise may certainly be a positive reinforcer, as the behavioural tradition would suggest, but the content of the praise matters. It should not only be specific (Brophy, 1981; O'Leary & O'Leary, 1977), but also explicitly emphasise strategy, effort, or other dimensions that are under children's control. We might, then, want to heed the sage advice Haim Ginott offered to parents nearly four decades ago, but also to qualify it by suggesting that it may be particularly applicable to girls beyond the preschool years:

> The single most important rule is that praise deal only with the child's efforts and accomplishments, not with his character and personality. (Ginott, 1965, p. 39)

Note

1. Statements were pre-tested on a sample of 28 adults who listened to and rated verbal recordings of two experimenters delivering the feedback statements. Ratings were made on seven-point scales and indicated that the person, product, and process praise statements were perceived as equally positive and effusive, but that the person praise statement was perceived as slightly less informative ($M = 5.98$, $SD = 1.17$) than the product ($M = 6.85$, $SD = 1.48$) and process ($M = 6.89$, $SD = 1.24$) praise statements.

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