

The Effects of Praise on Children's Intrinsic Motivation: A Review and Synthesis

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The authors argue against a purely behavioral definition of praise as verbal reinforcement in favor of the view that praise may serve to undermine, enhance, or have no effect on children's intrinsic motivation, depending on a set of conceptual variables. Provided that praise is perceived as sincere, it is particularly beneficial to motivation when it encourages performance attributions to controllable causes, promotes autonomy, enhances competence without an overreliance on social comparisons, and conveys attainable standards and expectations. The motivational consequences of praise also can be moderated by characteristics of the recipient, such as age, gender, and culture. Methodological considerations, such as including appropriate control groups and measuring postfailure outcomes, are stressed, and directions for future research are highlighted.

Praise, like penicillin, must not be administered haphazardly. There are rules and cautions that govern the handling of potent medicines—rules about timing and dosage, cautions about possible allergic reactions. There are similar regulations about the administration of emotional medicine. (H. Ginott, 1965, p. 39)

On the whole, we as a society seem to believe that praise has positive effects on children. We make a point to praise children for their accomplishments, and we expect our praise to enhance their motivation and boost their self-esteem. Indeed, many books written for teachers and parents echo this conventional wisdom that praise leads to positive outcomes. One recent article suggested that teachers “reward the student with verbal reinforcement when she or he exhibits desired behavior” (Dev, 1997, p. 16). Parents are given similar advice: “Be generous with your praise. Find as many opportunities to sincerely praise your children as you can” (McKay, 1992, p. 243). Praise is even recommended with adults; Dale Carnegie (1964) wrote that a key to winning friends and influencing people is to “be hearty in your approbation and lavish in your praise” (p. 38).

It is quite surprising, then, that the research literature is far less clear about how praise actually affects children's motivation. In

fact, a substantial number of studies indicate that praise can often be ineffective and sometimes even dysfunctional. One proponent of this view has suggested that “praise and reward, although often seen as positive, may be constructed as controlling interactions that delay or stifle the development of autonomous individuals” (Cannella, 1986, p. 297). Faber and Mazlish (1995), best-selling authors on communicating effectively with children, argued that “children become very uncomfortable with praise that evaluates them. They push it away. Sometimes they'll deliberately misbehave to prove you wrong” (p. 35). Farson (1963) proposed that, with adults, “praise is not only of limited and questionable value as a motivator, but may in fact be experienced as threatening” (p. 61). Thus, the commonsense view that praise leads directly to overwhelmingly positive outcomes may be at least somewhat misguided.

How, then, does praise affect children's motivation? In this review, we describe and examine the different answers to this question that exist in the literature. We begin by providing a brief overview of empirical evidence that might support each of two contrasting positions: that praise can enhance motivation, on the one hand, and that praise can undermine motivation, on the other. We then attempt to reconcile these conflicting positions by outlining conceptual variables that are likely to account for the different effects of praise on motivation. Using this more nuanced framework, we focus on the conditions under which praise is likely to promote versus undermine intrinsic motivation and perseverance in the face of setbacks. In addition, we highlight methodological flaws in the existing literature and suggest directions for future research. Because we are operating within a developmental framework, research on individuals of all ages is considered, but our primary focus is on how praise influences the motivation of children. Finally, it is important to note that the majority of research is based on experimental procedures that necessarily remove much of the context in which praise is typically embedded. Thus, we can only surmise how the variables discussed below would operate in light of variations in larger contextual factors such as, for example, the relationship between the evaluator and

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the recipient of praise, the extent to which the classroom climate is competitive versus cooperative, or whether praise is given to others in the same situation.

Defining Praise and Motivation

Before considering the diverse motivational consequences of praise in more detail, it is important to establish working definitions of both praise and motivation. Thus, *praise* refers to “positive evaluations made by a person of another’s products, performances, or attributes, where the evaluator presumes the validity of the standards on which the evaluation is based” (Kanouse, Gumpert, & Canavan-Gumpert, 1981, p. 98). This definition was selected in part because it is comprehensive, but also because it resonates well with a commonsense conception of praise. It lacks a few key elements, however, that need to be addressed before we consider the effects of praise on children’s motivation.

First, it is clear from the mixed findings in the praise literature that the “positive evaluations” mentioned in this definition do not necessarily serve a strict reinforcing function, but rather have the potential either to enhance or to undermine motivation, depending on several factors that we discuss in greater detail below. Second, praise is not a simple one-way transmission from the evaluator to the recipient but rather a complex social communication in which the role of the recipient is just as critical as the role of the evaluator. That is, the effects of praise vary depending not only on the content of the praise but also on the context in which it is delivered, the array of potential meanings it may convey, and the characteristics and interpretations of the recipient. Finally, it is also important to distinguish praise from other related concepts. Praise is different from simple acknowledgment and feedback (e.g., “That’s right”; “You scored 90%.”), which are more neutral forms of recognition, and is also distinct from encouragement (e.g., “You can do it!”), which is more future-focused than praise and often is used in response to negative performance outcomes. Although related, we also distinguish praise from more indirect techniques for conveying possible approbation, such as those used in research on *attributional labeling*, whereby a child is told, for example, that he or she “seems like the kind of person who . . . enjoys school” or “. . . likes to help others” or “. . . likes to do a careful job.” In such cases, the potential approval conveyed by these messages seems typically more tentative (you *seem* like), more indirect (the *kind of person* who), and more implicit (and you should assume that I approve of children who . . .) than praise as we have defined it.

In defining motivation, it is important to draw a distinction between *intrinsic motivation*, which refers to engagement motivated by pleasure or enjoyment, and *extrinsic motivation*, which refers to engagement motivated by external pressures or constraints. Our primary interest is in understanding how praise may foster or undermine intrinsic motivation, largely because internally driven engagement is associated with a host of positive outcomes such as creativity, persistence, and life-long learning. Of course, extrinsic motivation is also affected by praise, particularly when there is a continued expectation of reward or praise in the future. Indeed, if the extrinsic motivator is powerful enough, intrinsic motivation becomes almost irrelevant, or at least very difficult to measure, in the immediate situation. Thus, studies that measure motivation in later and more distant situations that are free from

obvious external contingencies are particularly valuable for ensuring that intrinsic—and not extrinsic—motivation is being assessed.

A secondary aspect of motivation that we also consider is perseverance in the face of setbacks. In some cases, praise may encourage behaviors or patterns of engagement that appear adaptive in situations of success but maladaptive when subsequent challenges arise. We seek to identify and understand these cases, as well as those in which praise fosters perseverance. Thus, the key outcome variables for the present review are subsequent intrinsic motivation—often best assessed by measures that are distant in both time and space from the experimental manipulation—and later perseverance in the face of failure. With these definitions in mind, we now consider the motivational consequences of praise.

Two Contrasting Views

Praise Enhances Intrinsic Motivation

One prominent view among researchers, educators, and parents is that praise routinely enhances intrinsic motivation (e.g., Anderson, Manoogian, & Reznick, 1976; Cameron & Pierce, 1994; Catano, 1975; Dev, 1997; McKay, 1992; O’Leary & O’Leary, 1977; Sarafino, Russo, Barker, Consentino, & Titus, 1982; Shanab, Peterson, Dargahi, & Deroian, 1981). Indeed, frequency of praise tends to be positively correlated with self-perceptions of ability among elementary school children (Blumenfeld, Pintrich, Meece, & Wessels, 1982), which in turn can enhance feelings of pride and expectations for success in the future (see Weiner, 1985, 1992). Praise also has been shown to increase children’s desire to engage in the praised task (e.g., Anderson et al., 1976; Harackiewicz, 1979; Sarafino et al., 1982; Swann & Pittman, 1977). In one study, for example, fourth-grade children who were praised for creating funny endings for riddles selected more riddles to complete at the end of the study than they had during a baseline period (Sarafino et al., 1982). As in much of the praise literature, however, this study did not include a no-praise control group, making it difficult to rule out alternative explanations.

Research with adults also supports the view that praise enhances intrinsic motivation. Shanab and colleagues (1981) found that positive verbal feedback during a puzzle-solving task led undergraduates to spend more time on the task and to rate their interest as higher than participants in a control condition who received neutral feedback. In another study, adults who were praised for a puzzle-completion task spent more time engaging in the same task during a subsequent free-choice session than those given no feedback (Deci, 1971). Praise also has been shown to improve adults’ performance at skilled tasks, compared with the performance of a control group (Catano, 1975, 1976; but see Baumeister, 1984; Baumeister, Hutton, & Cairns, 1990).

On a wider scale, meta-analytic studies reviewing the effects of rewards on motivation have shown that praise tends to increase intrinsic motivation across a variety of dependent measures (Cameron & Pierce, 1994; Deci, Koestner, & Ryan, 1999; Eisenberger & Cameron, 1996; Tang & Hall, 1995). The more recent and rigorous meta-analysis by Deci and colleagues (1999) found that verbal rewards had positive effects on self-reported interest for both children and college students but had positive effects on free-choice behavior for college students only, suggesting that the effects of praise on children are somewhat more complex. In

considering these results, however, it is important to note that the use of meta-analytic techniques for procedurally diverse literatures such as that of rewards and motivation has been called into question (Lepper, Henderlong, & Gingras, 1999; Lepper, Keavney, & Drake, 1996), and the particular meta-analyses conducted by Cameron and colleagues (Cameron & Pierce, 1994; Eisenberger & Cameron, 1996) have been widely criticized for a variety of methodological weaknesses, such as routinely collapsing across highly replicable and statistically significant interactions reflecting directly opposite effects (Deci et al., 1999; Kohn, 1996; Lepper et al., 1996, 1999).

Finally, the potential power of praise is evident in the behavior modification literature, in which programs are developed that involve the systematic and contingent use of praise over time for the purpose of reducing classroom behavior problems and encouraging students to learn. Such work has shown that praise can be a successful technique for influencing a variety of classroom behaviors, from abiding by classroom rules and engaging in positive peer relations to paying attention to teacher instructions and developing academic skills (e.g., Harris, Wolf, & Baer, 1967; Madsen, Becker, & Thomas, 1977; O'Leary & O'Leary, 1977). Despite the demonstrated success of such social approval techniques, however, praise is almost never isolated as a single variable in these studies (e.g., Brown & Elliott, 1965; Kastelen, Nickel, & McLaughlin, 1984; Kazdin, 1981; McAllister, Stachowiak, Baer, & Conderman, 1969; Ward & Baker, 1968). Therefore, it is unclear whether positive effects are due to praise per se, teacher attention following desired behaviors and/or teacher inattention following misbehaviors, special privileges, or any of a host of other components of any given program. It is also unclear whether the positive outcomes uncovered in these studies reflect intrinsic or extrinsic motivation.

Beneficial mechanisms. There are a number of theoretical mechanisms that may account for these positive effects of praise. One such potential mediating variable is self-efficacy, or personal beliefs about one's capabilities to achieve particular outcomes—a variable that has been linked to adaptive coping behavior, effort expenditure, and success (Bandura, 1982, 1997). Although self-efficacy is strongest when it arises from one's own accomplishments, *verbal persuasion* can be used to convince others that they do in fact have the ability to succeed, which should, in turn, enhance self-perceptions of efficacy (Bandura, 1977, 1997).

In a similar vein, cognitive evaluation theory focuses on competence and autonomy as basic psychological needs that, when fulfilled, result in an intrinsically motivated state (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). According to this theory, intrinsic motivation is enhanced to the extent that external events—including praise—promote greater perceived competence and facilitate an internal perceived locus of causality such that individuals believe they are responsible for their own behaviors and performance outcomes. Although it is less clear how praise per se should facilitate an internal perceived locus of causality, it is easy to imagine that most statements of praise serve to enhance children's perceptions of competence, which in turn positively impact intrinsic motivation.

Praise also may be effective simply because it creates a positive mood (see Delin & Baumeister, 1994) or because it makes people feel good about themselves (Blumenfeld et al., 1982). In addition, because of the positive interpersonal dynamic that typically accompanies praise, children may continue to exhibit praised behav-

ior to sustain the attention and approval of the evaluator. In this case, however, motivational benefits are purely extrinsic and may be quite transient, dissipating as soon as the evaluator is no longer present to dole out approval.

Finally, operant principles can be used to explain positive effects of praise on motivation. According to these principles, praise is thought to increase the frequency of behavior because the positive experience of being praised becomes associated with the behavior that elicited praise (e.g., O'Leary & O'Leary, 1977). Indeed, studies in this tradition have shown that praising children for following a rule, completing an assignment, or paying attention to the teacher results in an increased frequency of the desired behavior (e.g., Drabman & Lahey, 1974; Madsen et al., 1977). Positive outcomes of this sort, however, are also likely due to extrinsic motivation.

It is important to note that operant explanations can be criticized for their somewhat tautological nature. By definition, anything termed a *positive reinforcer* must increase the frequency of a behavior; thus, to the extent that praise is defined as a positive verbal reinforcer, it cannot have anything but enhancing effects. In cases in which praise fails to enhance motivation (which happens often enough to warrant attention), the explanation from the operant tradition can too easily be that the praise given was simply inappropriate verbal reinforcement. Because we believe the neutral and even negative effects of praise to be both interesting and important, we find a social-cognitive approach to the study of praise far more compelling than the operant tradition.

Even from this incomplete list, it is clear that there are a number of possible mechanisms to account for the potentially positive effects of praise. Future research might distinguish among them and delineate the conditions under which each is invoked.

Praise Undermines Intrinsic Motivation

The contrasting view, that praise is unnecessary or may in fact harm children's intrinsic motivation, has been articulated by Kohn (1993), who wrote that "the most notable aspect of a positive judgment is not that it is positive but that it is a judgment" (p. 102). Praise can create excessive pressure to continue performing well, discourage risk taking, and reduce perceived autonomy (e.g., Birch, Marlin, & Rotter, 1984; Gordon, 1989; Holt, 1982; Kohn, 1993). Ironically, research has shown that when praise is given for exceptionally easy tasks it can lead to inferences of low ability (Graham, 1990; Meyer et al., 1979), which, in turn, are likely to have harmful effects on subsequent motivation in the praised domain (Weiner, 1985, 1992).

Correlational research provides support for the view that praise can undermine motivation. For example, Grusec (1991) found a negative correlation between the degree to which mothers praised their 4-year-olds for acting prosocially and the degree to which their children actually behaved in a prosocial manner. In classroom observations, praise has been positively correlated with shorter task persistence, more eye-checking with the teacher, and inflected speech such that answers have the intonation of questions (Rowe, 1974). Furthermore, research on expert human tutors has suggested that it is the least effective tutors who use the most effusive and direct statements of praise (Lepper, Drake, & O'Donnell-Johnson, 1997; Lepper & Woolverton, 2002; Lepper, Woolverton, Mumme, & Gurtner, 1993). Aside from correlational evidence, the

negative effects of some forms of praise also have been amply demonstrated in experimental studies. One such study showed, for example, that children who were praised in a somewhat controlling manner for their performance on a booklet of word-search puzzles subsequently showed lower levels of intrinsic interest in the puzzles than children who received no feedback (Kast & Connor, 1988).

Detrimental mechanisms. How can a little well-intentioned praise really hurt anyone? Such effects may be easier to comprehend if praise is likened to other tangible rewards that tend to undermine intrinsic motivation under certain conditions. In a prototypic study demonstrating the negative effects of rewards on intrinsic motivation, preschool children who were asked to draw with magic markers in order to obtain a reward subsequently showed less intrinsic motivation for drawing than children who either received the same reward unexpectedly or neither expected nor received the reward (Lepper, Greene, & Nisbett, 1973). Their engagement was undermined, or overjustified, by the unnecessarily powerful compensation, leading to subsequent decrements in intrinsic motivation. Expected contingent praise may produce a similar overjustification effect, leading children to believe that their engagement was for the sake of adult approval rather than for the sheer enjoyment of the activity itself. We return to this point in greater detail below.

Other mechanisms accounting for the negative effects of praise revolve around its necessarily evaluative nature. For example, praise can instill a sense of contingent self-worth that leads to helplessness in the face of subsequent difficulties (Kamins & Dweck, 1999), or it can increase self-consciousness to the point of distraction from the task (Baumeister et al., 1990). Similarly, cognitive evaluation theory suggests that praise may call attention to the controlling behavior of adults, and it dampens intrinsic motivation to the extent that it leads children to shift from an internal to an external perceived locus of causality (Deci & Ryan, 1985). Thus, praise may have negative motivational consequences because it makes salient that one is being evaluated.

In contrast to the behaviorist argument that praise serves as a reinforcing agent, proponents of the view that praise can undermine motivation have explicitly argued against the construal of praise as verbal reinforcement (Brophy, 1981; Delin & Baumeister, 1994). According to Delin and Baumeister (1994), "it is inappropriate and misleading to treat praise as simply a category of reinforcement. . . . Reinforcement is . . . one limited and occasional result of praise" (p. 222). Brophy (1981) has drawn on the work of O'Leary and O'Leary (1977), who indicated that praise must be contingent, specific, and sincere if it is to function as a reinforcer. He found that, in the typical classroom, teacher praise frequently lacks contingency, specificity, and credibility and is often given in response to bids for praise from students; it is not surprising that Brophy also found that such praise does not correlate with student achievement. Furthermore, it is not clear that enhanced motivation and performance would result even if teachers' everyday praise statements did meet these criteria.

If praise has the potential to harm motivation, should we avoid it altogether? As Brophy (1981) argued, "Students do not actually need praise in order to master the curriculum, to acquire acceptable student role behaviors, or even to develop healthy self concepts" (p. 21). Cultural psychologists might agree that praise is not necessary because explicit praise may not exist in some cultures.

For example, among the Gusii of Kenya (LeVine, 1989) or the Zinacantec Maya (Childs & Greenfield, 1980; Maynard, 2002), it has been suggested that children learn and acquire important skills by observing others and are given feedback only when their performance is inadequate. Of course, the absence of praise in some cultures does not necessarily indicate that our Western culture, with all its accompanying standards and practices, would function well without praise. It does suggest, however, that praise may not be as fundamental to child rearing as our naive intuitions might lead us to believe.

In sum, there is ample evidence providing some support for arguments at both ends of the praise spectrum. In some cases, praise is helpful, and in other cases, harmful, to subsequent intrinsic motivation. In the next section, we attempt to understand these conflicting results by outlining several of the critical conceptual variables that are likely to determine the conditions under which praise has positive or negative effects on children's later intrinsic motivation and their perseverance in the face of subsequent challenges.

Conceptual Variables Influencing the Effects of Praise on Intrinsic Motivation

As we have suggested, many different mechanisms have been proposed to account for the effects of praise on motivation, as summarized in Table 1. Most of these mechanisms, however, concern only single specific beneficial or detrimental effects of praise, largely because they are based on studies that have individually defined praise in very circumscribed ways. Thus, although the topic of praise has been researched extensively, there has been little cross-fertilization of ideas and few attempts to systematize the findings. Reducing these numerous mechanisms to a smaller set of conceptual variables is helpful, both for organizing the literature and for highlighting the intervening processes that should be considered in future research. To this end, we spend the majority of this review discussing a set of such organizing themes or conceptual variables that help to determine how praise affects children's intrinsic motivation under various conditions.

To gain a representative sense of the literature and generate a set of conceptual variables, we searched the PsycINFO database using the key word *praise*, focusing on studies conducted from 1970 to 2001. Abstracts were reviewed to narrow the search primarily to studies examining praise and motivation in a social-cognitive framework. We also searched the reference sections of relevant articles to locate additional empirical and theoretical sources that may not have been catalogued using the term *praise*. It was not our aim to include every possible study or to conduct a quantitative review but rather to provide a representative overview of the literature regarding praise and children's intrinsic motivation.

Five common organizing themes emerged from the literature that seemed to capture the factors underlying the positive versus negative effects of praise: perceived sincerity, performance attributions, autonomy, competence and self-efficacy, and standards and expectations. These conceptual variables are not meant to represent an exhaustive list, but we do believe that they capture the majority of what research to date has uncovered about the effects of praise on children's intrinsic motivation and perseverance. Furthermore, whereas these variables may often be correlated with one another in the real world (e.g., praise may simultaneously

Table 1
Proposed Mechanisms for Beneficial and Detrimental Effects of Praise

Beneficial mechanisms	Detrimental mechanisms
Boosts self-efficacy (Bandura, 1977, 1997) Enhances feelings of competence and autonomy (Deci & Ryan, 1985) Creates positive feelings (Blumenfeld et al., 1982) Strengthens association between response and positive outcomes (O'Leary & O'Leary, 1977) Provides incentive for task engagement (Madsen et al., 1977) Encourages adaptive effort attributions (Henderlong, 2000; Mueller & Dweck, 1998) Provides motivating information about normative excellence (Koestner et al., 1990) Helps children regulate task engagement (Schunk & Zimmerman, 1997)	Leads to inferences of low ability, when given for easy tasks (Meyer, 1992) Overjustifies performance (Kohn, 1993; Lepper et al., 1973) Encourages stable ability attributions and contingent self-worth (Kamins & Dweck, 1999; Mueller & Dweck, 1998) Creates pressure and highlights self-consciousness (Baumeister et al., 1990) Causes perceived locus of causality to shift from internal to external (Deci & Ryan, 1985) Produces purely instrumental focus (Birch et al., 1984) Invites rejection of praise due to insincerity (Kanouse et al., 1981) Encourages invidious social comparison (Kohn, 1986)

convey messages about competence, autonomy, and expectations), they can be empirically distinguished. Thus, for the sake of conceptual clarity, in the present review we consider them largely independently of one another.

It is important to clarify whether the conceptual variables discussed below serve to moderate or mediate the effects of praise on intrinsic motivation. Although the majority of these variables have been examined primarily as moderators in previous research, we contend that many could also be conceptualized as continuous variables that might well serve a mediating function. For example, one might imagine competence as a moderator in the sense that praise statements that convey competence are likely to enhance intrinsic motivation whereas praise statements that subtly convey a lack of competence are likely to undermine intrinsic motivation. Competence also may be a mediator in that praise may impact the extent to which children view themselves as competent, which may in turn influence subsequent intrinsic motivation. Thus, both moderating and mediating functions are identified in our discussion, and we do not believe these variables can be characterized simply in terms of one function or the other. With these caveats in mind, we now turn to a discussion of the relevant conceptual variables.

Sincerity

Despite Grice's (1975) dictum that speakers should be truthful in their conversational contributions, this is not always the case when adults praise children. Most adults can probably recall instances in which they have purposely obscured the truth and used praise to manipulate, motivate, or protect children—with the children's best interests at heart. Indeed, such actions have already been documented with adults tutoring young children (Lepper et al., 1993, 1997).

Thus, an important first variable that may moderate the effects of praise on children's intrinsic motivation is perceived sincerity. In contrast to the other conceptual variables we consider subsequently, perceived sincerity might be viewed more as a true moderator—that is, a necessary condition that must be fulfilled to proceed further in an analysis of the motivational consequences of praise. After all, if children immediately dismiss words of praise, the extent to which praise might otherwise promote adaptive attributions or positive beliefs about competence, for example,

becomes largely irrelevant. Despite its obvious importance, however, this variable has received very little empirical attention. Therefore, our discussion is necessarily restricted to an analysis of existing theoretical speculation regarding the effects of perceived sincerity of praise on children's intrinsic motivation.

Probably the most relevant issue here is simply whether the evaluator is indeed being sincere and honest. Unfortunately, good data are not available to examine this seemingly straightforward issue, perhaps because it is likely considerably more difficult than it might appear at first glance to assess the effects of veridical versus false praise in a controlled study. Some data do exist, however, concerning the features of praise that are associated with perceptions of insincerity. For example, some researchers have argued that praise may be perceived as untrue when it is highly effusive or overly general (Ginott, 1965; Kanouse et al., 1981; Kohn, 1993; Lepper et al., 1993; O'Leary & O'Leary, 1977). Global judgments (e.g., "You're such an angel!") can be easily discounted if children think about instances in which their behavior was contrary to the praise (e.g., "I stole cookies earlier, so I can't really be an angel."). Thus, the more general the praise, the more likely it is to be inconsistent with some existing beliefs about the self. Indeed, Kanouse et al. (1981) have argued that such praise can lead to self-criticism or even attempts to sabotage future performance in order to resolve a discrepancy between the statement of praise and more realistic beliefs about the self (see also Ginott, 1965). Similarly, Kohn (1993) has argued that praise should be directed at specific aspects of performance because it is "less likely that there will be a gap between what someone hears and what he thinks about himself if we don't make sweeping comments about what he is like as a person" (p. 108).

The interaction between the content of praise and the stage of the learning process may also be important, such that praise may be most believable when it changes over time to reflect children's developing skills in a domain. A child who has acquired only very basic skills in a domain is unlikely to believe praise for high ability until more elaborate skills have been developed or greater success is achieved. Praise for hard work also may be discounted when children have explicitly not worked hard or when they perceive no means through which the evaluator would have information about how hard they worked. In addition, praise may be perceived as insincere when it is contradicted by nonverbal behavior (Brophy,

1981; Feldman & Donohoe, 1978) or delivered only after an extended pause following the relevant outcome during which the evaluator had searched for an appropriate response (Kohn, 1993). In all of these cases, praising honestly for behaviors or achievements for which one has evidence should enhance children's perceptions of sincerity.

In general, praise that is not given spontaneously but rather to reinforce or manipulate behavior may appear contrived to the recipient and will therefore be ineffective. It is unclear, however, how sensitive children may be to the manipulative function of praise, especially given that even adults have trouble detecting insincere flattery when it is directed at the self (Berscheid & Walster, 1969; Jones, 1964). Very young children may have difficulty inferring ulterior motives and therefore may be less likely to discount praise due to insincerity. Specifically, until about third grade, children seem to interpret nonliteral but intentional utterances (e.g., deception or irony) as if they were sincere remarks (Ackerman, 1981; Demorest, Meyer, Phelps, Gardner, & Winner, 1984; Winner, 1988). As Brophy (1981) has suggested, children below the age of 7 tend to interpret praise statements very directly,

construing them in a literal and concrete way (to the extent that they understand them), and fail to internalize them carefully to determine whether or not they make sense. With children at this level, even praise that is noncontingent or otherwise defective as specific reinforcement may still function reasonably well as encouragement or more general reinforcement. (p. 22)

On the other hand, Damon (1995) has argued that children are able and willing to question the intent of the praiser:

Children are perfectly capable of asking the same questions that we would ask when faced with empty flattery: Why do people feel they need to make up things about me? What is wrong with me that people need to cover up? What are these stories about me trying to prove? (p. 74)

In this case, it appears that insincere praise has the potential to do more harm than good. Thus, the issue of developmental differences in the degree to which perceived sincerity functions as a moderator remains an unresolved empirical question that should be addressed by future research.

Whether children perceive praise as sincere may also be a function of their existing views of themselves. Depending on their previous estimates of how capable, competent, or deserving they are, children may accept praise only when it is consistent with their self-views and reject praise that contradicts these beliefs (Delin & Baumeister, 1994; Kanouse et al., 1981). Of course, this begs the question of how to convince children of their competence if they already see themselves as incompetent and they reject attempts to enhance their self-conceptions through praise. In such cases, it may be particularly important that adults pay attention to the issues discussed above—that is, praise should be genuine, specific, and used somewhat sparingly so that it does not become dismissed on the basis of its emptiness and lack of contingency.

Finally, the perceived sincerity of praise may be dependent on the quality of the relationship between the evaluator and the recipient of the praise. One might imagine that, in the context of a close and caring teacher-child relationship, praise will be perceived as genuine and helpful. In contrast, the same praise statement given in the context of a more conflict-ridden or less-secure

relationship may be perceived as manipulative, controlling, or as a sign that that the teacher feels sorry for the student. Relationships not only may influence children's interpretations of praise but also may themselves be affected depending on the perceived sincerity of praise. For example, Delin and Baumeister (1994) have suggested that when children perceive praise as insincere, there may be negative interpersonal consequences, and Gordon (1989) has argued that when praise is perceived as insincere, children may feel that adults do not truly understand them, which is likely to harm the quality of the relationship.

In summary, praise may be perceived as insincere—and would therefore be likely to have negative motivational consequences—when it is overly general, highly effusive, or contradicted by other words or behaviors. Children's age, existing self-conceptions, and the quality of the relationship in which the praise is delivered may serve moderating functions. Of course, this is largely speculative, and our main point is simply that future research should address these issues of sincerity more directly. Assuming that praise is perceived as sincere and credible, however, we now turn to a discussion of four conceptual variables that help to account for the effects of praise on children's intrinsic motivation and perseverance.

Performance Attributions

In assessing or predicting motivation, it is important to consider the attributions or inferences children make about the causes of their successes and failures, such as whether they believe their performance was due to stable versus unstable or controllable versus uncontrollable factors. In this section we first consider attributions as they mediate the effects of praise on intrinsic motivation. Thus, depending on the circumstances, praise can encourage either adaptive or maladaptive attributions for performance, and these attributions then determine whether there are positive or negative motivational consequences. We then consider the moderating function of attributions as we compare the different outcomes of praise statements that comment explicitly on effort versus ability in terms of both intrinsic motivation and perseverance in the face of failure. Developmental differences are considered throughout.

Attributions as mediators. Attribution theory is rooted in the classic work of Heider (1958), Jones and Davis (1965), and Kelley (1967, 1973), and has been applied to the areas of achievement and education largely by Weiner and Graham (Graham, 1991, 1994; Weiner, 1985, 1994; Weiner & Kukla, 1970). The central tenet of this theory is that people search for the causes of achievement outcomes, particularly when failure is involved. People's causal inferences, in turn, guide subsequent behaviors and emotional reactions toward both themselves and others.

In the achievement domain, the dominant perceived causes are effort and ability, which differ most critically along the controllability dimension. Weiner (1994) has found distinct patterns of motivated behavior based on attributions to these causes, both in reasoning about the self and about others. Following personal failure, performance tends to improve when individuals make attributions to lack of effort, but tends to worsen when they make attributions to lack of ability. After all, it is far more encouraging for people to believe that they have failed because they simply did not try hard enough than to believe they lack some necessary

ability—the former being temporary and within an individual's power to change. When judging the failures of others, however, people tend to respond with punishment when they presume a lack of effort, but not when they presume that others lack ability. Thus, quite ironically, attributions to lack of effort bring negative reactions from others (punishment) but positive long-term consequences for the self (performance increments), whereas attributions to lack of ability bring more positive reactions from others (no punishment) but negative long-term consequences for the self (performance decrements). Punishment, or lack thereof, can thus send children messages about the causes of their failures.

Carrying this analysis into the domain of success, one might consider what messages praise, or lack thereof, can send to children about the causes of their successes. This question has been explored directly in a program of research by Meyer and his colleagues (e.g., Meyer, 1992; Meyer et al., 1979; Meyer, Mittag, & Engler, 1986). In an experimental paradigm (Meyer et al., 1986), 2 adult participants served as "learners," and two confederates of the experimenter served as "teachers." The 2 learners were first asked to take a test so that the teachers would have estimates of their ability at the task. Next, the 2 learners worked on a task relating to this ability and were both given feedback that their solutions were correct, but the 1st learner was praised for success by both teachers (e.g., "You have done very fine. I'm very pleased."), whereas the 2nd was given no additional feedback. Meyer et al. (1986) found that praised learners typically believed they had performed poorly on the initial test of ability and exhibited negative affect, but nonpraised learners typically believed they had performed well on the initial test of ability and exhibited positive affect. Consistent with Weiner's (1994) model, praised learners likely reasoned that the initial test must have revealed a low ability for the task, leading the teachers to view their success as praiseworthy, whereas nonpraised learners likely reasoned that the initial test must have revealed a high ability for the task, leading the teachers to view their success as natural. One might imagine that subsequent intrinsic motivation would be dampened for the 1st learner but enhanced for the 2nd.

This paradigm has been extended developmentally to examine children's understanding of praise as an attributional cue in hypothetical scenarios. One questionnaire study, for example, showed that high school students and adults judged the nonpraised student as having higher ability, while a remedial fifth-grade sample judged the praised student as having higher ability (Meyer et al. 1979). In a similar study, videotaped scenarios of two students performing similarly but receiving different teacher feedback were shown to 4- through 12-year-old children (Barker & Graham, 1987). In the video, the two students both achieved successful solutions, but one was praised (e.g., "Good thinking! Way to go!") while the other was given no additional feedback. As predicted, older children attributed higher ability to the nonpraised student whereas younger children attributed higher ability to the praised student.

These findings can be explained by research showing that young children tend to reason about the relationship between effort and ability in less complex ways than older children and adults (Covington, 1984; Harari & Covington, 1981; Nicholls, 1978). For example, studies by Nicholls (1978; Nicholls & Miller, 1984) have shown that children do not distinguish effort and ability as separate dimensions in their causal reasoning until approximately third

grade.¹ Preschool and early primary grade children tend to believe that effort and ability work together to produce achievement outcomes, whereas older children and adults believe that effort and ability have a compensatory relationship and that ability represents a maximum capacity. Similarly, Covington and colleagues (Covington, 1984; Covington & Beery, 1976; Harari & Covington, 1981) have demonstrated that self-worth is derived from both ability and effort for younger children but is derived almost exclusively from ability for older children. Given these beliefs, older children often devalue effort for relatively easy tasks because they view a high expenditure of effort as a sign of low ability. It follows, therefore, that praise given for easy tasks may translate into a positive message for young children but into a negative message for older children, who interpret the praise as signifying a low ability. Indeed, in the Meyer paradigm (e.g., Meyer et al., 1979), children who understand ability as capacity explain the different teacher feedback in terms of different abilities, whereas children who do not yet understand ability as capacity explain the different teacher feedback in terms of differential effort, teacher bias, or neater papers (Miller & Hom, 1997).

Thus, at least for older children, it is clear that sometimes praise may be damaging because it conveys a message of low ability. Of course, the Meyer paradigm (Meyer et al., 1979, 1986) involves praising a learner in the presence of another learner who is also receiving an implicit message from the teacher, and praise might not convey the same message of low ability were there no other learners present. Furthermore, despite its theoretical contribution, we question the external validity of the Meyer paradigm, in that the chances of two children performing identically and then receiving different explicit feedback in the company of only each other and the teacher are exceedingly slim. These studies, therefore, do not necessarily indicate that delivering praise to one student in the presence of others is harmful per se but rather that the subtle messages and implicit comparisons conveyed by praise have implications for students' beliefs about the causes of their academic outcomes, which in turn affect motivation.

Ability versus effort praise. Rather than focusing on ability versus effort attributions based on implicit social comparisons, other researchers have studied praise that comments explicitly on ability versus effort (e.g., Kamins & Dweck, 1999; Koestner, Zuckerman, & Koestner, 1987; Mueller & Dweck, 1998; Schunk, 1983, 1984; Schunk & Cox, 1986). In this sense, attributions can also serve to moderate the effects of praise on motivation.

Koestner and his colleagues (1987), for instance, examined the differences between ability and effort praise in a study with college students engaging in a hidden-figures task. They predicted that ability praise (e.g., "That's good; I can see your ability is above average for this puzzle.") would produce greater intrinsic motivation than effort praise (e.g., "That's good; I can see that you work harder than most people on this puzzle.") because of the strong message of competence. Indeed, compared with effort praise,

¹ Although young children appear not to distinguish controllable (e.g., effort) and uncontrollable (e.g., ability) causes in the achievement domain, it is important to note that even 5-year-old children are capable of using these attributional constructs in more social domains, such as in the case of differentiating aggression and withdrawal (Graham & Hoehn, 1995; Graham & Weiner, 1991).

ability praise led to more time spent on the puzzles in a free-choice period, higher preferred levels of challenge, and better performance on additional puzzle tasks.² The effort praise statement, however, may have been problematic in this particular situation. Given that undergraduates typically participate in lab experiments for course credit, and not for the inherent enjoyment of being a participant, highlighting their hard work may have led to embarrassment. If the task were of real value to the students, highlighting the effort expended might well have enhanced motivation. Furthermore, we might also consider the extent to which effort versus ability praise promotes perseverance. Ability praise may have produced immediate benefits but long-term costs in terms of vulnerability when faced with failure experiences, although no relevant measures were collected that would allow us to assess effects on perseverance.

On the basis of self-efficacy theory, Schunk (1983) also reasoned that ability praise should produce higher expectations for future performance than effort praise because of the stronger competence information, particularly for children in the early stages of learning a new task (Schunk, 1984). He found that third-grade children who were praised over several sessions for their ability (i.e., "You're good at this.") showed greater skill acquisition and self-efficacy than children praised for their effort (i.e., "You've been working hard."). However, self-efficacy and skill acquisition were both negatively correlated with posttest persistence. Schunk concluded that ability attributional feedback boosts motivation because it signifies success with relatively little effort, leading to enhanced self-efficacy. One might argue, however, that ability praise, although it enhanced skill acquisition and self-efficacy, sent a subtle message that one should give up trying when things become difficult, as indicated by the low levels of posttest persistence.³ Furthermore, it is unclear how children praised for ability would interpret temporary setbacks in the future. Would the enhanced self-efficacy serve as a buffer in the face of failure, or would children assume that they were incapable of succeeding because they had learned to associate outcomes with ability? In fairness to Schunk, he qualified his findings, acknowledging that ability feedback was effective precisely because it was paired with success. In academic life, however, success is never guaranteed, no matter how bright the student. Therefore, it is critical to consider how praise for success will lead children to react when faced with subsequent setbacks.

In a direct examination of this issue, Mueller and Dweck (1998) predicted that ability praise would encourage a performance-goal orientation and ability attributions for performance but that effort praise would encourage a mastery-goal orientation and effort attributions for performance. In other words, ability praise should lead children to focus on proving their intelligence, whereas effort praise should lead children to focus on increasing their skills even if mistakes would be made in the process. These orientations and attributions, Mueller and Dweck argued, are important when children are eventually exposed to failure situations. In a series of studies, fifth-grade children were given an initial praise statement (i.e., "Wow, you did very well on these problems. You got [number of problems] right. That's a really high score.") followed by either ability praise (i.e., "You must be smart at these problems."), effort praise (i.e., "You must have worked hard at these problems."), or no additional feedback. Following this success experience, children were exposed to a more difficult set of problems

with feedback that they had done "a lot worse." Consistent with predictions, children who had been praised for their ability showed a performance-goal orientation and made ability attributions for their performance, whether it was success or failure. Furthermore, following the set of failure problems, children who had been praised for their ability showed less task enjoyment, less persistence, and poorer performance relative to children who were praised for effort. Much like tangible rewards, ability feedback may produce desired outcomes in the short-run, but may undermine intrinsic motivation and subsequent perseverance.

The benefits of effort praise may be limited, however, if effort is overemphasized or if hard work results in failure (for discussions, see Mueller & Dweck, 1998; Schunk & Cox, 1986). Because older children see effort and ability as inversely related (e.g., Covington, 1984; Nicholls, 1978), an overemphasis on effort may also signify a lack of ability. In the case of hard work resulting in failure, one might argue that simple informational feedback with no praise component would be the best response. Unfortunately, Mueller and Dweck (1998) did not allow for this possibility because all participants received the initial positive feedback statement. It would be interesting to replicate their study with the inclusion of a no-praise control group to determine the absolute effect of effort versus ability praise on children's subsequent motivation.

Person versus process praise. One way to avoid these potential pitfalls of effort praise may be to frame praise in terms of broader process-oriented factors that include, but are not limited to, effort, such as the sorts of strategies, self-corrections, or thoughtful concentration underlying children's achievements. Indeed, one might think of ability versus effort praise as merely one subset of the broader category of person (i.e., trait-oriented) versus process (i.e., strategy- or effort-oriented) praise—a dimension of praise that has been the subject of recent empirical investigation (Henderlong, 2000; Kamins & Dweck, 1999).

Before discussing this work, it is important to note that the concept of trait-oriented praise is reminiscent of a related literature in which the key variable is the attributional label attached to a child-directed statement (e.g., Cialdini, Eisenberg, Green, Rhoads, & Bator, 1998; Grusec, Kuczynski, Rushton, & Simutis, 1978; Grusec & Redler, 1980; Jensen & Moore, 1977; Miller, Brickman, & Bolen, 1975; Mills & Grusec, 1989). Much of this work suggests that children are more likely to engage in a given behavior if they are told that they possess an attribute relevant to that behavior. For example, Miller and colleagues (1975) showed that children who were labeled as being *tidy* actually became tidier than both a

² In addition, the hidden-figures task was introduced to the participants as either a test or a game, and there was a significant interaction between type of praise and the way in which the task was introduced. Effort praise resulted in more intrinsic motivation in the gamelike setting than in the testlike setting, whereas ability praise resulted in more intrinsic motivation in the testlike setting than in the gamelike setting.

³ As articulated by an anonymous reviewer, the relationship between self-efficacy, persistence, and skill development is complex. As self-efficacy and skill development increase, we might expect a negative correlation between self-efficacy and persistence because success will come easily for highly skilled and efficacious individuals. With a difficult task that goes beyond present skills, however, we would expect a positive correlation between self-efficacy and persistence.

control group and a group of children who received persuasive messages to become tidier. The literature on attributional labeling typically involves more direct manipulations of attributions than does praise and often does not include dependent measures to indicate intrinsic motivation. Thus, it is only marginally relevant to the present discussion. Moreover, these studies do not include failure experiences and thus do not address the issue of perseverance that is of most interest in considering the effects of person praise.

Recent research in the praise literature has suggested that person- or ability-oriented praise does indeed have the potential to undermine intrinsic motivation and perseverance when children later encounter failures in the praised domain. Specifically, Kamins and Dweck (1999) found that kindergarten children who had been given person praise (e.g., "You're a good boy!") in a role-play procedure were more likely to show a pattern of helplessness when faced with later failure than children who had been given process praise (e.g., "You must have tried really hard!"). In a conceptually similar study, preschool children were given person praise (e.g., "You are a great puzzle-solver!"), process praise (e.g., "You're finding really good ways to do this!"), or neutral feedback (e.g., "You finished both puzzles.") for their performance on a puzzle task before experiencing subsequent failure on another puzzle task (Henderlong, 2000). Intrinsic motivation was assessed several weeks later by observing children's engagement with the puzzle task in their regular classrooms. Process praise enhanced postfailure intrinsic motivation more than person praise, but both types of praise produced motivational benefits relative to neutral feedback. Thus, whereas Kamins and Dweck concluded that person praise led to an increased vulnerability to subsequent helplessness, research by Henderlong suggests that—for these young children—the vulnerability produced by person praise only exists relative to process praise and that person praise may still be superior to giving no praise at all. Although it is important to know that effort praise is superior to ability praise (Mueller & Dweck, 1998) and that process praise is superior to person praise (Kamins & Dweck, 1999), it may be of equal theoretical and practical significance to know whether ability- and person-oriented praise statements are truly detrimental to intrinsic motivation and perseverance, in the sense that such praise is worse than no praise at all.

Indeed, work with upper-elementary students in a similar paradigm showed that, relative to neutral feedback (e.g., "You scored 90%. Cantor, 1999), process praise (e.g., "You're using good puzzle-solving strategies!") enhanced intrinsic motivation, whereas person praise (e.g., "You must be really good at puzzles!") undermined intrinsic motivation for girls but left intrinsic motivation unchanged for boys (Henderlong, 2000). In this case, the no-praise control condition revealed that person praise does appear to have a true dampening effect in upper-elementary students, at least for girls. Taken together, these findings suggest not only that process-oriented praise may be superior to person-oriented praise, but also that the inclusion of a neutral feedback comparison condition is critical, and that these effects may be moderated by both age and gender.

With respect to gender differences, Koestner, Zuckerman, and Koestner (1989) have argued that, in success situations, boys may be more comfortable with ability praise, whereas girls may be more comfortable with effort praise. To test this hypothesis, they gave fifth- and sixth-grade children either ability or effort praise

for working on a hidden-figures task. As predicted, perceptions of competence, performance, and intrinsic motivation were all enhanced for boys when ability praise was given, and the same were enhanced for girls when effort praise was given. Koestner et al. did not include a no-praise control group, however, so it is not possible to determine if ability or effort praise was increasing or decreasing motivation relative to baseline. In addition, as with much of the research reviewed thus far, dependent measures were collected only after success, so there is no information about the degree to which these types of praise may promote perseverance in the face of setbacks.

Overview of attributions. In summary, attributing successful performance to ability, as opposed to effort or other more process-oriented factors, may have long-term costs when children later experience failure in the praised domain. In addition, when children are praised for accomplishments that are achieved easily by others, they may view praise as an indication of their low ability. It is important, therefore, to focus not only on explicit attributional messages embedded in praise but also on implicit messages that can be inferred from the context in which praise is delivered. Also, attributional processes may operate differently depending on age and gender, which in turn influences the motivational consequences of praise.

Perceived Autonomy

A third central conceptual variable concerns the extent to which praise leads children to perceive their engagement with a task to be autonomously driven. Whereas the performance attributions variable discussed above is concerned with the causes for a person's successes and failures, the perceived autonomy variable is concerned with a person's reasons for engaging in various activities or tasks. In the case of performance attributions, people ask themselves, "Why did I succeed?" or "Why did I fail?" In the case of perceived autonomy, people ask themselves different questions: "Why did I do that? Was I interested, or did I do it only for the rewards?"

Praise that reduces perceived autonomy and highlights external reasons for task engagement may undermine intrinsic motivation by superceding internal standards and may create a dependency on praise such that the absence of praise signifies failure (e.g., Damon, 1995; Deci & Ryan, 1980, 1985; Ginott, 1972; Gordon, 1989; Kohn, 1993). In this section, we first discuss the ways in which praise may act as a controlling reward that may undermine intrinsic motivation. We then consider the moderating role of perceived autonomy by contrasting controlling versus informational aspects of praise, and we conclude with a brief discussion of gender differences in perceived autonomy.

Praise as extrinsic reward. The process through which praise can reduce autonomy and serve as a controlling reward was described by Gordon (1989):

Praise especially acts as an extrinsic reward, and its effect on children is quite predictable. Children who are subjected to frequent praise learn to select only those things they think will please their parents and avoid doing those things that may not. While to some parents this may seem very desirable, we know that such children are much less apt to become innovative, creative, self-directing. They learn to conform rather than innovate, and to follow a pattern known to bring praise rather than to experiment with something new. (p. 41)

This process can be understood in light of self-perception and attribution theories, which posit that people understand internal states by observing their behavior in conjunction with forces in the environment that may have shaped that behavior (Bem, 1972; Kelley, 1973). If these forces, such as praise from a parent or teacher, indicate clear extrinsic reasons for engaging in a behavior, an individual—whether the self or an outside observer—would assume that the behavior was performed not because of an internal state, but rather because of the external contingency. Conversely, if a behavior is performed in the absence of psychologically sufficient external motivators, we would assume that the behavior reflects an internal state. Once the external contingency is removed, only individuals who believe their actions have been autonomous are likely to continue performing that behavior. As we discussed previously, this phenomenon has been well documented for more tangible rewards (for recent reviews, see Deci et al., 1999; Lepper & Henderlong, 2000; Sansone & Harackiewicz, 2000) but may also apply to social rewards like praise.

Of course, there are important differences between tangible rewards and praise. Typically, praise is less salient, conveys more information about competence, and is almost always unexpected—all of which make it less likely to be interpreted as a powerful force controlling behavior and therefore undermining intrinsic motivation. Even from an operant perspective, praise differs from rewards in that it is typically given more frequently, more closely in time following behavior, and with fewer discriminative stimuli associated with its availability, which could account for the more positive effects of praise relative to rewards that are often found in laboratory research (Carton, 1996). If praise matches rewards on these dimensions, its consequences are likely to be similar, as in the rare case that praise is expected rather than unexpected (Deci et al., 1999; Harackiewicz, Manderlink, & Sansone, 1984). It is very difficult, however, to construct a statement of praise that is both expected and ecologically valid (see Lepper & Henderlong, 2000).

Despite these differences, praise can sometimes produce detrimental effects similar to those of tangible rewards (e.g., Birch, Marlin, & Rotter, 1984; Butler, 1987). In one study on the effects of eating as a means to an end, preschoolers were given either praise (i.e., “You’re a really good taster. Good job.”) or rewards (i.e., snacks and movie tickets) contingent on drinking a yogurt-like beverage, kefir, over a period of 4 weeks (Birch et al., 1984). In a control condition, children were given the same number of rewards, but there was no contingency between drinking the kefir and earning the rewards. After the 4-week period, the children who drank kefir to gain rewards or praise preferred it less than they had in an initial taste test, whereas the children in the control condition preferred it more. The lack of difference in kefir preferences between children in the praise and reward groups suggests that praise can have effects similar to those of rewards. The similar effects of praise and rewards can be attributed, in part, to the fact that both likely became expected outcomes of drinking kefir over the 4-week period.

There may be developmental differences with respect to this phenomenon. Research on children’s reasoning about hypothetical situations involving reward procedures suggests that young children tend not to discount intrinsic reasons for behaviors in the presence of extrinsic contingencies to the same extent as older children and adults (Karniol & Ross, 1976, 1979; Smith, 1975).

Rather than discounting an internal cause when an extrinsic cause is made salient, kindergarten children tend to use an additive principle—assuming that more causes (both intrinsic and extrinsic) indicate a greater desire for the activity (Karniol & Ross, 1976). However, when children are observed in meaningful behavioral contexts or in concretized hypothetical settings, even preschoolers are capable of using the discounting principle to make inferences about the causes of their own behavior, as suggested by the kefir study described above (Birch et al., 1984; see also Lepper et al., 1973; Lepper, Sagotsky, Dafoe, & Greene, 1982). In addition to changes in discounting ability, there are also interesting developmental increases in the tendency for individuals to use more identified or integrated—as opposed to external—regulatory styles (Chandler & Connell, 1987; see also Ryan & Deci, 2000). Thus, it may be fruitful for future research to consider the role of praise not only in terms of how it impacts intrinsic motivation but also in terms of how it may serve to facilitate the transition from less to more autonomous forms of extrinsic motivation.

Informational versus controlling aspects of praise. Outside of self-perception theory, cognitive evaluation theory has explained the detrimental effects of praise through a shift in perceived locus of causality from internal to external, which reduces feelings of self-determination and, consequently, dampens intrinsic motivation (Deci, 1975; Deci & Ryan, 1980, 1985). Whether this shift and the accompanying undermining effect take place depends on the relative salience of two functional aspects of praise: the informational and controlling aspects. “The informational aspect facilitates an internal perceived locus of causality and perceived competence, thus enhancing intrinsic motivation. The controlling aspect facilitates an external perceived locus of causality, thus undermining intrinsic motivation and promoting extrinsic compliance or defiance” (Deci & Ryan, 1985, p. 64). Thus, Deci and Ryan proposed not a general effect of praise on motivation, but rather that the effect is moderated by the salience of its informational versus controlling aspects, which in turn can lead to intrinsic versus extrinsic motivation, respectively.

Several empirical studies have examined the informational–controlling dimension with respect to praise (e.g., Kast & Connor, 1988; Pittman, Davey, Alafat, Wetherill, & Kramer, 1980; Ryan, Mims, & Koestner, 1983). In a study by Pittman and his colleagues (1980), adults worked on a puzzle task and were praised twice during the session in either an informational (e.g., “Compared to most of my subjects, you’re doing really well.”) or a controlling (e.g., “I haven’t been able to use most of the data I’ve gotten so far, but you’re doing really well, and if you keep it up I’ll be able to use yours.”) manner. In a subsequent free-choice period, participants in the informational condition spent more time with the task compared with participants in the controlling or no feedback conditions. Thus, informational praise enhanced intrinsic motivation, but controlling praise had no effect. Similar results were obtained by Ryan et al. (1983) in a study in which adults were given either informational (e.g., “You did very well on that one.”) or controlling (e.g., “You did very well on that one, just as you should.”) feedback for their performance on a hidden-figures task. Controlling feedback had no effect on subsequent motivation, whereas informational feedback had an enhancing effect relative to a no-feedback control group.

According to cognitive evaluation theory, though, in addition to the positive effects of informational praise, there should be nega-

tive effects of controlling praise (Deci & Ryan, 1980, 1985). It is not clear why controlling praise did not undermine intrinsic motivation in the studies mentioned above, although it may be simply that the controlling statements were not powerful enough. There are, however, other studies in which controlling praise has led to decrements in intrinsic motivation, especially if one considers praise situations that involve salient external contingencies (e.g., Birch et al., 1984; Boggiano, Main, & Katz, 1991; Kast & Connor, 1988). Nonetheless, this issue highlights a potential complexity of the informational–controlling distinction. Though it is often easy to make predictions about the effects of informational versus controlling statements relative to one another, it is typically much more difficult to make absolute predictions about whether the net effects are likely to be positive, negative, or neutral relative to a control condition. Furthermore, in many cases, it is difficult to tell whether a specific statement is objectively more informational or more controlling, leaving open the possibility that the classification of a praise statement could be driven more by its results than by its objective properties. Hence, it is important not to make a post hoc decision that statements were controlling, for example, simply because the motivational consequences were negative.

Finally, in addition to the informational–controlling dimension, the relationship between praise and autonomy might also be thought of in terms of Kruglanski's (1978) endogenous–exogenous distinction. As Malone and Lepper (1987) have suggested, rewards are endogenous when recognition of excellence is a natural part of the activity, as in the case of a recital or exhibition, but rewards are exogenous when recognition of excellence is contingent on, but separate from, the activity itself, as in the case of an honor roll system. Thus, endogenous praise would encourage one to think of an activity as an end in itself, whereas exogenous praise would encourage one to think of an activity as a means to an end. Although research has not directly addressed this endogenous–exogenous distinction in relation to praise, we suspect that endogenous praise would enhance intrinsic motivation whereas exogenous praise would undermine it.

Gender differences in perceived autonomy. Several studies have suggested that females may be particularly susceptible to negative outcomes resulting from praise that diminishes perceived autonomy (e.g., Deci, 1972; Deci, Cascio, & Krusell, 1975; Kast & Connor, 1988; Koestner et al., 1989; Zinser, Young, & King, 1982). This pattern has been explained by the socialization of females to be dependent and interpersonally aware versus the socialization of males to be independent and focused on achievement (Deci, 1975; Deci et al., 1975; Deci & Ryan, 1980, 1985). According to Deci and Ryan (1980, 1985), females become easily dependent on feedback and consequently pay particular attention to evidence of having pleased the evaluator, making salient an external locus of causality when praised. Males, on the other hand, develop internal standards of evaluation and pay attention to evidence of achievement, rather than evidence of having pleased the evaluator, when praised. Thus, Deci and Ryan (1980, 1985) argued that males tend to focus on the informational aspects of praise and females tend to focus on the controlling aspects.

This account was examined directly in a clever study with elementary school children who received either informational, controlling, or mixed feedback for their performance on a puzzle task (Kast & Connor, 1988). Both boys' and girls' interest in the task was undermined by the controlling feedback, compared with

the informational feedback or no-feedback control conditions. However, in the mixed feedback condition, girls' interest decreased compared with the informational condition or no-feedback control group, whereas boys' interest increased compared with the controlling condition. The authors concluded that girls pay more attention to the controlling and interpersonally relevant aspects of praise whereas boys pay more attention to the informational and achievement-relevant aspects of praise. Because the vast majority of research documenting gender differences in children's reactions to praise has used feedback statements that differ only on this informational–controlling dimension, however, it is not presently clear how much these findings of greater motivational benefits of praise for males relative to females can be generalized beyond this particular dimension to other types of praise.

Overview of autonomy. In summary, praise can promote autonomy and therefore enhance intrinsic motivation when it is informational or endogenous to the task. Praise may encourage an external causal locus and therefore undermine intrinsic motivation to the extent that it highlights a means–end contingency, includes heavily controlling statements, or is exogenous to the task. Thus, when praise acts as a superfluous and controlling reward, intrinsic motivation suffers.

Competence and Self-Efficacy

A fourth conceptual variable concerns the information about competence and self-efficacy embedded in praise. Although competence is more general than self-efficacy, the two constructs are similarly relevant to personal beliefs about the ability to achieve outcomes, and are therefore discussed as one conceptual variable.

In the previous section, we highlighted the importance of perceived autonomy and the question, "Why did I do that?" In this section, the relevant question becomes: "Am I capable of doing this?" Thus, whereas the autonomy variable is concerned with reasons for task engagement, the competence variable is concerned with beliefs about potential for success. In this section, then, we focus on informational praise, not in contrast to controlling praise, but rather in terms of the extent to which it conveys evidence of personal competence and increases self-efficacy (Bandura, 1977, 1997; Deci & Ryan, 1980, 1985; Harackiewicz & Manderlink, 1984; Sansone, 1986). We also consider the moderating function of competence as we discuss praise that is focused on social comparisons versus individual mastery.

Informational feedback about competence. A large majority of studies showing beneficial effects of praise have used feedback statements that provide competence-enhancing information (e.g., Boggiano & Ruble, 1979; Harackiewicz, 1979; Kast & Connor, 1988; Pretty & Seligman, 1984; Ryan et al., 1983; Sansone, 1989). For example, Harackiewicz (1979) praised students for their performance on a hidden-figures task by saying, "We've found that the average student usually finds four . . . so you did better than the average high-school student on these puzzles" (p. 1357). These praised participants later showed greater intrinsic motivation across a variety of dependent measures compared to a no-praise control group. In another study of adults completing a puzzle task, participants in the praise condition were told, "Your strategies are among the best I've seen so far" (Pretty & Seligman, 1984, p. 1244). This statement conveyed specific competence information

about puzzle-solving ability and enhanced intrinsic motivation compared to a no-praise control group.

Similar results have been found with children. One study with preschoolers, for example, showed that informational praise (e.g., "You are pretty good at this; You really did a good job.") led to longer subsequent engagement with the task, relative to baseline and relative to groups of children given money or symbolic rewards (Anderson et al., 1976). In this particular study, however, the type of reward was confounded with perceived contingency (for a discussion, see Pallak, Costomiris, Sroka, & Pittman, 1982; see also Swann & Pittman, 1977). That is, praise was performance-contingent (i.e., apparently given because the child produced "nice" drawings), whereas the other rewards were task-contingent (i.e., apparently given merely because the child produced drawings). This confound is especially relevant because there is substantial evidence linking the contingency of rewards to their motivational consequences (e.g., Deci et al., 1999; Deci & Ryan, 1980; Harackiewicz, 1979; Ryan et al., 1983; Sharpley, 1988). Thus, the competence-enhancing effects of praise should be examined separately from the effects of performance- versus task-contingent rewards. This confound in the Anderson et al. study was addressed, in part, by a conceptually similar study conducted with high school students. Reward contingency and positive feedback were unconfounded, and intrinsic motivation was indeed enhanced by the positive competence feedback (Harackiewicz, 1979), thus supporting the original claim.

Informational feedback about competence also has been shown to neutralize the harmful effects of tangible incentives on intrinsic motivation for children when this competence feedback is paired with task-contingent rewards (Boggiano & Ruble, 1979; Swann & Pittman, 1977). These and similar studies raise the question of whether there are motivational benefits of praise per se or if instead these benefits are simply a product of information about competence that is embedded within the praise statement (see Kohn, 1993).

Social-comparison versus mastery praise. Although there appears to be sufficient evidence to conclude that the competence-enhancing properties of praise benefit intrinsic motivation, one might consider further the various forms that information about competence can take and how these forms may moderate the effects of praise. For example, many studies have found that competence information enhances motivation, in terms of both subsequent time on task and reported enjoyment of the task, when it informs children they have performed better than their peers (e.g., Blanck, Reis, & Jackson, 1984; Boggiano & Ruble, 1979; Deci, 1971; Koestner, Zuckerman, & Olsson, 1990; Shanab et al., 1981; Sarafino et al., 1982). However, these studies have not considered the degree to which a focus on normative excellence will lead to perseverance, or a lack thereof, in the face of future adversity. If children learn to gauge personal success primarily by comparing themselves with others rather than by focusing on individual mastery and skill acquisition, they may not be well-equipped to deal with later situations in which others show superior performance. It may be particularly telling to observe children who have learned to depend on social-comparison praise when, in learning a new task, they achieve objective task mastery but do so less quickly or less perfectly than their peers. Rather than rejoicing in their obvious accomplishments, these children may well demonstrate negative affect, frustration, and some degree of helplessness,

at least to a greater degree than children who have a history of more mastery-oriented feedback. Thus, it may be important that information conveying competence does not simultaneously encourage invidious social comparison (Dreikurs, Grunwald, & Pepper, 1982; Kohn, 1986).

Although these potentially negative effects of social-comparison praise on perseverance have not yet been appropriately tested, a large literature on social-comparison versus mastery goals has shown that normative comparisons tend to result in negative motivational outcomes (e.g., Ames, 1984; Dweck, 1986; Nicholls, 1984). For example, compared with mastery goals, social-comparison goals lead children to attribute negative outcomes to a lack of ability, to experience satisfaction only to the degree that the task displays their ability (Dweck, 1986), and to avoid challenges and develop learned helplessness (Elliott & Dweck, 1988). Social-comparison goals also are associated with negative affect and less effective learning strategies (Ames, 1984, 1992; but see Harackiewicz, Barron, & Elliot, 1998). It seems likely, then, that praising for normative excellence may be more harmful than praising for individual task mastery.

Of course, there are also important differences between the social-comparison praise used in typical classrooms and the social-comparison praise given on an individual basis in most laboratory studies. In the classroom, a focus on normative comparisons necessitates that some children receive positive feedback while others receive negative feedback. After all, not everyone can be at the top of the class. On an individual basis, however, all children can be given (often inaccurate) positive normative feedback. Thus, researchers should be aware that what is learned from individual children in the laboratory does not necessarily transfer to children in the classroom and vice versa.

Nonetheless, on the basis of the extensive literature outlining the relative merits of mastery versus performance goals in the classroom, it is expected that social-comparison praise may leave children vulnerable to the inevitable negative normative information they will encounter as they progress through school. The empirical exploration of this issue must be conducted using a developmental framework, however, because research suggests that children tend not to use normative information to infer personal competence until the age of 7 or 8 (e.g., Boggiano & Ruble, 1979; Ruble, Boggiano, Feldman, & Loebel, 1980; Stipek & MacIver, 1989). It is unlikely, therefore, that social-comparison praise would have the proposed negative effects on perseverance and subsequent intrinsic motivation until children reach the upper-elementary years.

Overview of competence and self-efficacy. In summary, the literature suggests that praise is motivating to the extent that it leads the recipient to feel competent and efficacious. Praise that enhances competence primarily by making social comparisons, however, may result in an overdependence on normative comparisons and less perseverance when faced with setbacks.

Standards and Expectations

A final conceptual variable concerns the standards and expectations conveyed by praise. Specifically, praise can indicate both the performance standards that define doing well on a given task and the expectations that must be met to satisfy a given praising

agent. Depending on the specific praise statement and the particular context in which it is delivered, providing information about standards and expectations can have either positive or negative effects. Because very little empirical work has addressed this issue directly, we are largely limited to speculation about the moderating role of standards and expectations. In this section, we argue that praise conveying realistic standards for success and expectations for the future likely enhances intrinsic motivation but that praise conveying standards and expectations that are either excessively high or low—thus creating pressure or suggesting low ability, respectively—likely undermines intrinsic motivation. We also examine the role that standards and expectations may play in driving the gender differences that are frequently observed in children's responses to praise.

The moderating function of standards and expectations. Positive motivational outcomes are likely to occur when standards and expectations convey useful information for helping children to regulate their task engagement (e.g., Deci & Ryan, 1985; Delin & Baumeister, 1994; Kanouse et al., 1981; Schunk & Zimmerman, 1997; Stipek, 2002). Learning what it takes to reach some standard of excellence—whether it be exerting a certain amount of effort, using a particular problem-solving approach, or answering a given percentage of questions correctly—may help children know where to focus their energies in the future; this may be a powerful source of motivation. Kanouse and his colleagues (1981) have argued that, when a reasonable standard of evaluation has been used, praise that indicates what exactly children are being praised for is likely to establish a sense of “deservingness” and to enhance motivation. Children also then have an understanding of the particular aspects of their performance that were strong, and they can infer what still needs improvement. While in the presence of that same praising adult, children also have increased control over their future evaluations because they have additional information about the values and expectations of that particular adult.

Specificity is one feature that may influence the extent to which praise provides useful information about standards and expectations (see Kanouse et al., 1981). The specificity of praise can take multiple forms, ranging from specificity about performance relative to others, to specificity about performance relative to some absolute standard, to specificity about the particular aspects of performance that exemplify what it means to do well on a given task.⁴ Although there may be considerable overlap between these types of specificity in the real world, the first two forms of specificity deal primarily with conveying information about competence whereas the third form deals more with conveying information about the standards of excellence for the given task, which by extension may also imply that the child has attained those standards. We are largely concerned with the third form of specificity, and we suggest that praise that is specific along this dimension may enhance intrinsic motivation relative to more general praise.

Of course, the key variable is not specificity per se but rather the extent to which praise provides information about the exact nature of (a) the standard of evaluation (e.g., 90% correct indicates successful performance), (b) the particular behaviors that define, or promote, doing well and thus meeting that standard (e.g., answering thoughtfully and concisely leads to a high percentage of correct responses), and (c) the expectations of the praiser in that specific context (e.g., the praiser will be pleased with a score of

90% correct), all of which would tend to be positively correlated with specificity. Praise that bears on one of these standards would likely bear on the others as well. For example, a study by Scheer (1976/1977) compared general praise (e.g., “Great!”) and descriptive praise (e.g., “Great! I like the way you are sorting by shape.”) to a no-praise control group. Children in the descriptive praise condition showed enhanced performance relative to children in the general praise and no-praise conditions. In this case, the descriptive praise provided information about behavior that comprised good performance (i.e., it was good to sort by shape) as well as the expectations of the praiser (i.e., one might assume that the praiser expected the child to continue sorting by shape). Thus, praise that provided specific information about standards that could be realistically met enhanced task performance, although this study does not provide information about its effect on subsequent intrinsic motivation.

Although conveying information about standards and expectations can be useful—particularly if praise is descriptive—there can also be potentially negative consequences for intrinsic motivation. As we discussed earlier, praise that indicates low expectations of ability has harmful effects on motivation (Barker & Graham, 1987; Graham, 1990; Meyer, 1992; Meyer et al., 1979). On the other hand, praise that conveys unrealistically high expectations can create unnecessary pressure to perform well in the future or can highlight external contingencies that may undermine intrinsic motivation (Baumeister, 1984; Baumeister et al., 1990; Birch et al., 1984; Deci & Ryan, 1985; Kanouse et al., 1981; Kohn, 1993). McKay (1992) argued that the burden to perform well in the future is particularly onerous when children are overpraised (e.g., “That’s incredible! I’ve never seen such patient behavior in all my life!”). Under these circumstances, children may feel uncomfortable and anxious: Are they now consistently expected to demonstrate unsurpassed levels of patience? The concept of contingent self-worth (Burhans & Dweck, 1995; Covington, 1984; Covington & Beery, 1976; Dreikurs et al., 1982) is relevant here as well. If praise indicates to children both that they are valued because they have met such a high standard and that these expectations are held for future performance, do children fear that they will be worthless if they fail?

Praise conveying standards for success can also heighten self-focused attention to the point that performance is disrupted (Baumeister et al., 1990; Kluger & DeNisi, 1996). In one series of experiments, male undergraduates were praised (i.e., “Very good!”) for a driving-skills task whenever they reached a predetermined goal score (Baumeister et al., 1990). In the driving segments following the praise, their scores were markedly below their overall average, leading the authors to believe that the praise had disrupted performance. This effect was replicated with female undergraduates with praise for task-irrelevant characteristics (e.g., personal appearance) and with praise given at random points in the driving task. The authors suggested that praise can create a state of increased self-consciousness that is then disruptive to the auto-

⁴ We thank a thoughtful anonymous reviewer for highlighting this complexity of specificity.

matic processes involved in skilled performance.⁵ It is important to note that these findings concern only performance—not necessarily subsequent motivation—and that research suggesting that praise has the potential to increase self-focused attention is based solely on adult participants. Thus, future work should examine whether a similar process exists in children. In terms of our current interest in children's intrinsic motivation, it may be particularly useful to extend this type of investigation to more meaningful achievement contexts, such as a case in which a teacher interrupts a child's engagement in academic work to deliver praise.

Gender differences in familiarity of standards and expectations. In some circumstances, praise may have different effects on the intrinsic motivation of boys versus girls precisely because gender-specific praise statements set up gender-specific standards and expectations. That is, boys and girls may respond differently to various types of praise because they typically get—and are accustomed to receiving—different types and frequencies of feedback in the classroom. For example, some teachers may (probably unknowingly) convey information about their expectancies for performance through different patterns of evaluative feedback given to boys versus girls. Indeed, in an observational study of 17 fifth- through ninth-grade math classrooms, Parsons, Kaczala, and Meece (1982) found that teacher praise given to boys was correlated with teacher expectancies for performance, whereas praise given to girls was distributed almost randomly. It is not surprising, then, that levels of teacher praise were positively correlated with student perceptions of teacher expectancies and with self-concept of ability for boys but not for girls.

The differential use of evaluative feedback for boys versus girls was also shown in a classic study conducted by Dweck and her colleagues (Dweck, Davidson, Nelson, & Enna, 1978). This observational investigation demonstrated that when positive feedback was given, it was directed almost exclusively toward the intellectual quality of work for boys. For girls, however, in addition to praise for intellectual substance, positive feedback also was directed at matters of form, such as neatness or following instructions. When negative feedback was given, it was directed toward the intellectual quality of work much more for girls than for boys, who were also criticized for messy papers and unruly behavior. According to Dweck et al. (1978), these findings “suggest that positive evaluation is less indicative of ability for girls than for boys, and negative evaluation is less indicative of ability for boys” (p. 274). These studies suggest that the frequency, type, and contingency of praise can convey different standards and expectations for boys versus girls, which in turn may account for gender differences in response to praise manipulations given in the laboratory (e.g., Deci, 1972; Kast & Connor, 1988; Koestner et al., 1987, 1989; Zinsler et al., 1982). Indeed, experience with a given type of reward structure tends to heighten the salience of that type of reward in the future (Pallak, et al., 1982).

Overview of standards and expectations. In summary, praise enhances intrinsic motivation when it provides useful information about task-specific standards of excellence or conveys reasonable expectations of the praising adult. It may undermine intrinsic motivation, however, when it invokes unrealistic standards of excellence or highlights self-focused attention during the execution of skilled behavior. This conceptual variable is likely to be most relevant when there is an expectation of continued engagement with the task or with the person giving the praise, which are

both common in the classroom and the home but not in typical laboratory situations to date. Thus, future research should be directed at understanding the complex consequences of providing information about standards and expectations when children do anticipate future engagement with the task or evaluator in controlled laboratory contexts.

Summary of Conceptual Variables

In summary, these five conceptual variables represent issues that are important to consider in both the empirical study of praise and its practical application. To review, praise enhances intrinsic motivation and increases perseverance when it is perceived as sincere, encourages adaptive performance attributions, promotes perceived autonomy, provides positive information about personal competence without relying heavily on social comparisons, and conveys standards and expectations that are realistic and not disruptive. Figure 1 is a graphic representation of the moderating function of the latter four conceptual variables, assuming that the first condition of perceived sincerity is met.

Of course, the effects of praise depend not only on these conceptual variables but also on the situation in which behavior is observed as well as on characteristics of the recipient, such as age and gender. For example, expectations conveyed by praise may be useful and motivating as long as the individual continues to interact with the same teacher but may prove to be less useful—and possibly confusing—once the individual moves into other contexts. Similarly, motivational processes may operate differently when tasks are accomplished successfully versus when individuals are faced with failure. Although not all of the conceptual variables represented in Figure 1 are relevant in all situations, they should at least be considered by the caregiver, teacher, and researcher alike in order to accurately predict the motivational consequences of praise.

A Cultural Caveat

Because almost all of the research cited above has been conducted in the United States, we cannot necessarily extend these conceptual variables to other cultures. Nonetheless, there are some tantalizing cross-cultural issues, particularly with respect to Asian cultures, that can be conceptualized according to these variables. We raise some of these issues here and highlight culture as an issue to explore in future research on the effects of praise on children's motivation.

Although there are undoubtedly some important similarities, praise may affect motivation quite differently for children from more collectivist and interdependent cultural backgrounds than the United States. One possibility is that the potentially harmful effects of praise would not obtain in these collectivist cultures because, in contrast to the Western understanding of ability as capacity, Jap-

⁵ They also found a significant task by feedback interaction such that praise hindered performance on a skilled task (i.e., driving) but facilitated performance on a purely effort-based task (i.e., card sorting). As the authors themselves noted, however, replication is needed with a larger range of tasks because these results may have been specific to the particular tasks employed in their studies, not necessarily their skillful or effort-based nature.

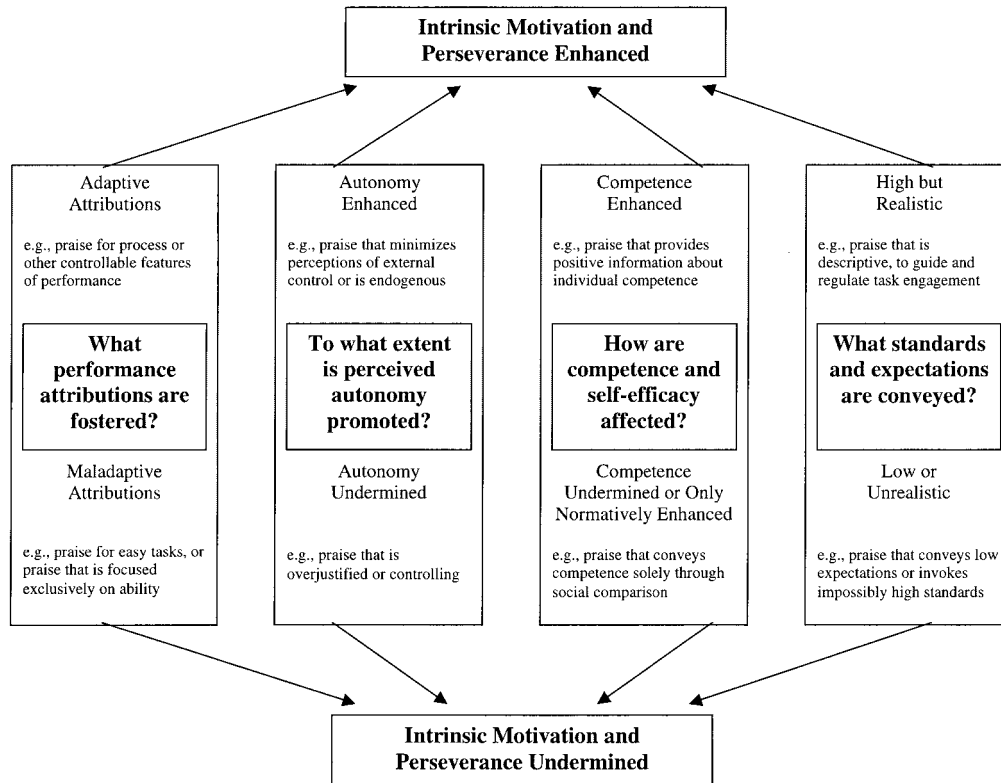


Figure 1. Conceptual variables moderating the effects of praise on subsequent intrinsic motivation and perseverance, provided that praise is perceived as sincere.

anese and Chinese beliefs about achievement outcomes center primarily on effort (e.g., Lewis, 1995; Salili, 1996; Stevenson et al., 1990; Stevenson & Stigler, 1992; White, 1987). Indeed, when mothers and their children in China, Japan, and the United States were asked about the importance of effort relative to ability in explaining achievement outcomes, Americans consistently assigned more importance to ability than did Chinese and Japanese individuals (Stevenson et al., 1990; Stevenson & Stigler, 1992). In these collectivist cultures, the process of working on a task is just as important as the outcome of the work, and truly virtuous task engagement must involve *gambaru* (working hard and persisting; White, 1987). Because many of the potentially harmful effects of praise depend on an understanding of effort and ability as inversely related (e.g., Covington, 1984; Meyer et al., 1986; Miller & Hom, 1997; Weiner, 1994), praise that indicates high effort for easy tasks may not be as harmful—and may in fact be helpful—when given in collectivist cultures.

Recall the Meyer (1992; Meyer et al., 1986) paradigm in which a nonpraised student is assumed to have higher ability than a praised student because both students demonstrated success and the praised student is assumed to have exerted more effort. Would this same message of low ability due to high effort be inferred by children from collectivist cultures? This question was addressed, in part, by a study replicating the Meyer paradigm with a sample of Chinese elementary school, high school, and university students (Salili & Hau, 1994). In the first part of the study, participants were given several scenarios and asked to estimate the ability of hypo-

thetical students. As in the Western sample, older participants tended to think the nonpraised student had higher ability than the praised student, but younger participants tended to think that the praised student had higher ability. In contrast to research with Western individuals, however, effort and ability perceptions were always positively correlated, and the strength of this correlation merely weakened with age. In the second part of the study, Chinese students actually took a math test followed by contrived feedback given in pairs. In each pair, the two students were given similar scores, but one was praised while the other was given neutral feedback. When asked to evaluate the ability of the other student in the pair, younger students perceived the praised other to have higher ability, whereas older students did not perceive any difference in ability levels of praised and nonpraised others. Furthermore, students who were praised for success gave very positive evaluations of their own effort and ability, suggesting that praise may not have the same potential for harm in collectivist cultures. As Salili and Hau (1994) noted, “for Chinese students, people working hard have higher ability and those who have high ability must have worked hard” (p. 233).

Although this research suggests that praise may have motivationally enhancing effects in collectivist cultures, praise is scarcely used in China and Japan (e.g., Lewis, 1995; Salili, 1996; Salili & Hau, 1994). Indeed, in these East Asian cultures, praise is thought to be harmful to a child’s character if given too often (Salili, 1996). Observations of Japanese elementary schools suggest that reward systems and other attempts to control children’s behavior are rare

and that children appear to be remarkably internally motivated (Lewis, 1995). As Lewis has noted,

teachers' reluctance to use direct control and their hard work to see that class norms emerge "naturally" from the children may create a classroom situation in which it is very hard for children to attribute their behavior to adult control—and very easy for children to think of themselves as responsible, good children committed to norms they've helped to shape. (p. 119)

We might suggest, therefore, that the infrequent use of praise may be at least somewhat responsible for its effectiveness. Salili (1996) made a similar observation: "Praise, when given, is seldom done publicly and only for exceptional achievement or other virtues (Salili, Hwang, & Choi, 1989). In such an environment praise or reward has a highly motivating effect" (p. 61).

Recent research also suggests that, in contrast to the benefits of self-enhancement in Western cultures, people from collectivist cultures are motivated by self-improvement (Heine, Kitayama, Lehman, Takata, & Ide, 1998; see also Heine, Lehman, Markus, & Kitayama, 1999). When exposed to success and failure situations, Canadian students persisted significantly longer after success feedback than failure feedback, whereas Japanese students showed the opposite pattern, suggesting that they were motivated by the opportunity for self-improvement (Heine et al., 1998). Thus, although praise may not be as harmful in these collectivist cultures, it also appears not to be as necessary because of a decreased tendency to gravitate toward self-enhancing information. Future research is needed to address these issues more explicitly as they relate to praise.

Directions for Future Research

With these conceptual variables in mind, we now turn to a discussion of some of the most pressing issues and questions to be addressed by future research.

Methodological Issues

As highlighted throughout this review, our understanding of how praise affects children's motivation would benefit by addressing in the future the methodological shortcomings that have plagued past research.

Appropriate control conditions. First, future studies should include a no-praise, or otherwise appropriate, control group, which has not always been the case in previous research (e.g., Anderson et al., 1976; Koestner et al., 1989; Sarafino et al., 1982). For example, in the study by Anderson and colleagues (1976) in which children spent more time drawing with markers after praise than after other reward conditions or a no-feedback control condition, the control condition entailed the experimenter deliberately ignoring children throughout the entire drawing period. It is not surprising that this "neutral" condition produced the lowest level of subsequent intrinsic motivation relative to the other three conditions. The authors reported a second study with a more appropriate control condition in which the experimenter showed interest in the child's drawing but did not deliver praise; although Anderson et al. argued that praise enhances intrinsic motivation on the basis of this second study, time spent playing with markers in the praise group

was not significantly different from time spent in this second, more appropriate control group.

Appropriate dependent measures. Second, to the extent that researchers wish to assess intrinsic motivation, dependent measures should be collected in situations that are free from obvious or implied extrinsic contingencies. One way this can be accomplished is to collect measures that are separated in space and time from the experimental context, as exemplified by Lepper et al. (1973), who demonstrated that expected rewards can have quite substantial undermining effects on children's motivation in a different setting several weeks after the manipulation. Recent work has shown that praise can actually have no effects on children's immediate behavior in a laboratory setting but quite striking effects when dependent measures are unobtrusively collected several weeks later in children's regular classrooms (Henderlong, 2000).

Similarly, to the extent that researchers wish to assess perseverance, dependent measures should be collected following a challenging experience. Recent studies (e.g., Henderlong, 2000; Kamins & Dweck, 1999; Mueller & Dweck, 1998) have demonstrated exactly this point by measuring the effects of praise both immediately after it is given and following a subsequent failure experience. These studies have shown that different types of praise do not produce vastly different effects on motivation following success, but when children experience failure later in the same laboratory session, markedly different patterns of behavior emerge. Astute classroom observer John Holt (1982) has also recognized this phenomenon:

If children worry so much about failure, might it not be because they rate success too high and depend on it too much? May there not be altogether too much praise for good work in the lower grades? If, when Johnny does good work, we make him feel "good," may we not, without intending it, be making him feel "bad" when he does bad work? (p. 79)

In giving praise, we must be particularly sensitive to the possibility that children may take what we say in situations of success and apply it to situations of failure in the future, a possibility that should be explored much more extensively in future research.

Appropriate manipulations. Finally, future studies should design manipulations that vary only along the dimension of interest and do not confound this dimension with other meaningful variables. For example, in previous research, praise conditions have been confounded with reward contingency (e.g., Anderson et al., 1976; Swann & Pittman, 1977) and the informational versus controlling nature of the statements (e.g., Bernhardt & Forehand, 1975). It is important to note, however, that certain confounds may routinely exist in the real world. For example, it may often be the case that praise is performance-contingent while other rewards are task-contingent, that process praise typically conveys more specific information about competence than person praise, or that ability praise is often more positive than effort praise. One goal of laboratory research is to control for these potentially confounding variables, but it also may be important to capture how children's motivation is affected by praise statements as they are used in everyday discourse between adults and children. Thus, although laboratory research must carefully avoid confounding variables, the need to control and measure potential confounds becomes less important in studies examining praise in its natural context. In such

research, these problems shift from shortcomings to necessary aspects of conducting research that is highly ecologically valid.

Understanding Moderators and Mediators

As this review has made explicit, the extant literature is replete with moderating variables and mediating processes that likely determine the effects of praise on children's intrinsic motivation. Probably the most important issues for future investigation revolve around testing these variables and processes more systematically. It also may be useful to identify more situation-specific or individual-difference moderators in addition to the conceptual variables highlighted above. For example, one such moderator may be the existing relationship between the evaluator and the recipient of praise. The quality of this relationship may particularly impact the assumptions made regarding the motives of the evaluator (e.g., whether he or she is seen as supportive and helpful versus controlling and manipulative), and we are currently conducting research to examine such a moderating function.

Another variable in need of further investigation is gender. As we highlighted above, the effects of praise often differ for males and females—particularly when praise is controlling or focused on effort—but these differences are poorly understood. Thus, research should investigate not only moderators that may define important boundary conditions, such as gender, but also mediators that may help us to understand what may be driving the varying effects of praise for males versus females or for different populations of children under different conditions.

Examining Potentially Harmful Consequences

Another interesting and practically important area for future investigation is understanding the potentially negative effects that some types of praise may have under certain conditions. As discussed above, person-oriented praise may have unintended negative consequences for intrinsic motivation, performance, and perseverance when children experience subsequent setbacks in the praised domain. Likewise, we have suggested that social-comparison praise may have similar unintended consequences, and we are currently preparing studies to determine how such praise may impact children's intrinsic motivation, perseverance, and information-seeking behaviors. It would be worth considering whether there are other types of praise that also may have seemingly positive effects on motivation after success but potentially harmful long-term consequences because they encourage maladaptive patterns of thoughts and behaviors in achievement situations.

Given that there may indeed be undermining effects of certain types of praise that are common in everyday interactions between adults and children, we might also consider developing procedures to protect children against negative outcomes in the face of such feedback. To date, such intervention work has not been conducted in the domain of praise, though similar research has successfully protected children against the negative effects of tangible rewards (Hennessey, Amabile, & Martinage, 1989) and learned helplessness (Dweck, 1975; Foersterling, 1985). Much like traditional attribution-retraining techniques, the goals of such interventions could range from teaching children that mistakes are an inherent part of the learning process, to emphasizing that failures are due to temporary and controllable causes, to encouraging a mastery ver-

sus normative focus when assessing ability. Exposure to such interventions may mitigate any undermining effects that may occur when children are later exposed to these potentially harmful types of praise.

Broadening the Scope of Study

A final direction for future research involves broadening the range of variables and issues typically considered in the study of praise. It may be interesting, for example, to examine the relationships between children's reactions to praise and their beliefs about the malleability of intelligence (see Dweck, 1986, 1999; Dweck & Leggett, 1988). One might imagine that, in cases in which praise conveys messages of low ability, children who view intelligence as a fixed entity will have more negative reactions than children who view intelligence as a malleable quality. In addition, because children who view intelligence as a fixed entity tend also to hold performance—as opposed to mastery—goals, they may be particularly attuned to praise that conveys information about competence through means of social comparison, which may prove maladaptive in terms of subsequent perseverance.

Another interesting area for future research may be achievement-related emotions, which likely have an important mediating function but have been largely neglected in research on praise. Future efforts might be directed at understanding the circumstances under which praise is likely to instill pride versus shame and the ways in which these feelings may subsequently enhance or undermine intrinsic motivation. Similarly, little work has focused on the role of achievement values. How does praise shape values, and how are the effects of praise dependent on these values? It may be fruitful to examine these questions with early adolescents who may struggle to resolve conflicts between pleasing teachers who value achievement and pleasing peers who may devalue good performance in school. As Ward (1976) has noted, “praise delivered contingently by a teacher to an adolescent as simple interpersonal communication is reinforcing: in the presence of a peer group it can be highly punishing” (p. 262). Indeed, adolescents use different techniques for managing impressions of their achievement behaviors when interacting with teachers versus peers (Juvonen, 2000), and the majority of adolescents indicate that they would prefer to either be praised quietly or not at all as opposed to being praised publicly (Elwell & Tiberio, 1994). These issues may also be interesting to explore in ethnic minority students, as the school experience of Kareem Abdul-Jabbar might suggest:

It was my first time away from home, my first experience in an all-black situation, and I found myself being punished for doing everything I'd ever been taught was right. I got all A's and was hated for it. . . . There was nothing I could do about schoolwork; it never occurred to me to give up learning, but one thing I did learn was not to be too smart out loud. (Abdul-Jabbar & Knobler, 1983, pp. 16–17)

Whether praise mollifies or exacerbates such conflicts is an empirical question, but at least in cases like this, one might imagine that praise from a teacher can result in torture on the playground.

It is also important for future work to go beyond the laboratory setting. We have some descriptive information about how teachers praise children in actual classrooms, but we know very little about how parents praise children in naturalistic contexts. We might

consider compromising between strict experimentation and naturalistic observation, employing quasi-experimental designs in natural settings like real classrooms (for excellent examples, see Dweck et al., 1978; Miller et al., 1975). Future investigations in context are important because the effects of praise almost certainly depend on established community norms and values, such as whether praise is part of everyday pedagogical practice, whether it is publicly valued, and how it impacts peer relationships.

Finally, it may also be important to include an adult perspective in future research. Little research has explored adult beliefs about the effectiveness of praise per se, but research on reward strategies more generally has indicated that adults tend to believe that more salient and more controlling rewards have greater motivational benefits for children than less salient and less controlling rewards, despite the documented undermining effect of highly salient rewards (Barrett & Boggiano, 1988; Boggiano, Barrett, Weiher, McClelland, & Lusk, 1987). Other research more directly examining beliefs about praise has shown that parents tend to rate many different types of praise—even those that have been shown to have undermining effects—as having greater motivational benefits than neutral feedback (Henderlong, 2000). Even if one were to conclude that praise may be harmful to motivation, therefore, adults may experience difficulties withholding it.

Summary and Conclusion

Because adults rely on praise both to influence children's behavior and to express approval, it is important that its motivational consequences are understood. In this review, we have argued that the effects of praise on children's intrinsic motivation and perseverance are both complex and diverse, ranging from beneficial to negligible to detrimental. We have attempted to bring together a disparate set of findings and to integrate the existing literature by discussing key conceptual variables that are likely to moderate and mediate the motivational consequences of praise. Specifically, provided that it is perceived as sincere, praise is likely to enhance intrinsic motivation when attributional messages prevent maladaptive inferences, when autonomy is promoted, when perceived competence and self-efficacy are heightened without undue use of social comparison, and when realistic standards and expectations are conveyed. We have also argued that praise may affect motivation differently depending on characteristics of the recipient, such as age, gender, and culture. Thus, as in the rewards literature more generally, rather than asking whether praise enhances intrinsic motivation, it is far more useful to ask about the conditions under which this is likely to occur.

We also have highlighted methodological and conceptual weaknesses of the extant literature and suggested multiple pathways for future research. It is our hope that this review will make salient the variables that should be considered to design studies that are relatively free of confounds and weaknesses. Over time, this should lead to an enriched empirical knowledge base—both conceptually and methodologically—about the diverse ways in which praise can affect children's motivation and, in turn, their academic achievement and adjustment. Before closing, it is important to acknowledge that children's motivation is almost certainly overdetermined. Although praise may play a significant role in shaping children's motivation, we do not believe it to be the only, or even the most important, influence. At least in American society, how-

ever, praise does seem to address an important human desire to seek the approval of others. As Norman Vincent Peale is said to have stated, "most of us . . . would rather be ruined by praise than saved by criticism."

References

- Abdul-Jabbar, K., & Knobler, P. (1983). *Giant steps*. New York: Bantam Books.
- Ackerman, B. P. (1981). Young children's understanding of a speaker's intentional use of a false utterance. *Developmental Psychology, 17*, 472–480.
- Ames, C. (1984). Achievement attributions and self-instructions under competitive and individualistic goal structures. *Journal of Educational Psychology, 76*, 478–487.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261–271.
- Anderson, R., Manoogian, S. T., & Reznick, J. S. (1976). The undermining and enhancing of intrinsic motivation in preschool children. *Journal of Personality and Social Psychology, 34*, 915–922.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122–147.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Barker, G. P., & Graham, S. (1987). Developmental study of praise and blame as attributional cues. *Journal of Educational Psychology, 79*, 62–66.
- Barrett, M., & Boggiano, A. K. (1988). Fostering extrinsic orientations: Use of reward strategies to motivate children. *Journal of Social and Clinical Psychology, 6*, 293–309.
- Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology, 46*, 610–620.
- Baumeister, R. F., Hutton, D. G., & Cairns, K. J. (1990). Negative effects of praise on skilled performance. *Basic and Applied Social Psychology, 11*, 131–148.
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.
- Bernhardt, A. J., & Forehand, R. (1975). The effects of labeled and unlabeled praise upon lower and middle class children. *Journal of Experimental Child Psychology, 19*, 536–543.
- Berscheid, E., & Walster, E. H. (1969). *Interpersonal attraction*. Menlo Park, CA: Addison-Wesley.
- Birch, L. L., Marlin, D. W., & Rotter, J. (1984). Eating as the "means" activity in a contingency: Effects on young children's food preference. *Child Development, 55*, 431–439.
- Blanck, P. D., Reis, H. T., & Jackson, L. (1984). The effects of verbal reinforcement of intrinsic motivation for sex-linked tasks. *Sex Roles, 10*, 369–386.
- Blumenfeld, P. C., Pintrich, P. R., Meece, J., & Wessels, K. (1982). The formation and role of self perceptions of ability in elementary classrooms. *The Elementary School Journal, 82*, 401–420.
- Boggiano, A. K., Barrett, M., Weiher, A. W., McClelland, G. H., & Lusk, C. M. (1987). Use of maximal-operant principle to motivate children's intrinsic interest. *Journal of Personality and Social Psychology, 53*, 866–879.
- Boggiano, A. K., Main, D. S., & Katz, P. (1991). Mastery motivation in boys and girls: The role of intrinsic versus extrinsic motivation. *Sex Roles, 25*, 511–520.
- Boggiano, A. K., & Ruble, D. N. (1979). Competence and the overjustification effect: A developmental study. *Journal of Personality and Social Psychology, 37*, 1462–1468.

- Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5–32.
- Brown, P., & Elliott, R. (1965). Control of aggression in a nursery school class. *Journal of Experimental Child Psychology, 2*, 103–107.
- Burhans, K. K., & Dweck, C. S. (1995). Helplessness in early childhood: The role of contingent worth. *Child Development, 66*, 1719–1738.
- Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology, 79*, 474–482.
- Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*, 363–423.
- Cannella, G. S. (1986). Praise and concrete rewards: Concerns for childhood education. *Childhood Education, 62*, 297–301.
- Carnegie, D. (1964). *How to win friends and influence people*. New York: Simon & Schuster.
- Carton, J. S. (1996). The differential effects of tangible rewards and praise on intrinsic motivation: A comparison of cognitive evaluation theory and operant theory. *The Behavior Analyst, 19*, 237–255.
- Catano, V. M. (1975). Relation of improved performance through verbal praise to source of praise. *Perceptual and Motor Skills, 41*, 71–74.
- Catano, V. M. (1976). Effectiveness of verbal praise as a function of expertise of source. *Perceptual and Motor Skills, 42*, 1283–1286.
- Chandler, C. L., & Connell, J. P. (1987). Children's intrinsic, extrinsic, and internalized motivation: A developmental study of children's reasons for liked and disliked behaviours. *British Journal of Developmental Psychology, 5*, 357–365.
- Childs, C. P., & Greenfield, P. M. (1980). Informal modes of learning and teaching: The case of Zinacanteco weaving. In N. Warren (Ed.), *Studies in cross-cultural psychology* (Vol. 2, pp. 269–316). London: Academic Press.
- Cialdini, R. B., Eisenberg, N., Green, B. L., Rhoads, K., & Bator, R. (1998). Undermining the undermining effect of rewards on sustained interest. *Journal of Applied Social Psychology, 28*, 249–263.
- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal, 85*, 5–20.
- Covington, M. V., & Beery, R. (1976). *Self-worth and school learning*. New York: Holt, Rinehart & Winston.
- Damon, W. (1995). *Greater expectations: Overcoming the culture of indulgence in America's homes and schools*. New York: Free Press.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105–115.
- Deci, E. L. (1972). Intrinsic motivation, extrinsic reinforcement, and inequity. *Journal of Personality and Social Psychology, 22*, 113–120.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum Press.
- Deci, E. L., Cascio, W. F., & Krusell, J. (1975). Cognitive evaluation theory and some comments on the Calder and Staw critique. *Journal of Personality and Social Psychology, 31*, 81–85.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*, 627–668.
- Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 39–80). New York: Academic Press.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist, 26*, 325–346.
- Delin, C. R., & Baumeister, R. F. (1994). Praise: More than just social reinforcement. *Journal for the Theory of Social Behaviour, 24*, 219–241.
- Demorest, A., Meyer, C., Phelps, E., Gardner, H., & Winner, E. (1984). Words speak louder than actions: Understanding deliberately false remarks. *Child Development, 55*, 1527–1534.
- Dev, P. C. (1997). Intrinsic motivation and academic achievement: What does their relationship imply for the classroom teacher? *Remedial and Special Education, 18*, 12–19.
- Drabman, R. S., & Lahey, B. B. (1974). Feedback in classroom behavior modification: Effects on the target and her classmates. *Journal of Applied Behavior Analysis, 7*, 591–598.
- Dreikurs, R., Grunwald, B. B., & Pepper, F. C. (1982). *Maintaining sanity in the classroom: Classroom management techniques* (2nd ed.). New York: Harper & Row.
- Dweck, C. S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology, 31*, 674–685.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41*, 1040–1048.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Dweck, C. S., Davidson, W., Nelson, S., & Enna, B. (1978). Sex differences in learned helplessness: II. The contingencies of evaluative feedback in the classroom and III. An experimental analysis. *Developmental Psychology, 14*, 268–276.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256–273.
- Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality or myth? *American Psychologist, 51*, 1153–1166.
- Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology, 54*, 5–12.
- Elwell, W. C., & Tiberio, J. (1994). Teacher praise: What students want. *Journal of Instructional Psychology, 21*, 322–328.
- Faber, A., & Mazlish, E. (1995). Praise that doesn't demean, criticism that doesn't wound. *American Educator, 19*, 33–38.
- Farson, R. E. (1963). Praise reappraised. *Harvard Business Review, 41*, 61–66.
- Feldman, R., & Donohoe, L. (1978). Nonverbal communication of affect in interracial dyads. *Journal of Educational Psychology, 70*, 979–987.
- Foersterling, F. (1985). Attributional retraining: A review. *Psychological Bulletin, 98*, 495–512.
- Ginott, H. G. (1965). *Between parent and child*. New York: Macmillan.
- Ginott, H. G. (1972). *Teacher and child*. New York: Macmillan.
- Gordon, T. (1989). *Teaching children self-discipline*. New York: Times Books.
- Graham, S. (1990). On communicating low ability in the classroom: Bad things good teachers sometimes do. In S. Graham & V. Folkes (Eds.), *Attribution theory: Applications to achievement, mental health, and interpersonal conflict* (pp. 17–36). Hillsdale, NJ: Erlbaum.
- Graham, S. (1991). A review of attribution theory in achievement contexts. *Educational Psychology Review, 3*, 5–39.
- Graham, S. (1994). Classroom motivation from an attributional perspective. In H. F. O'Neil Jr. & M. Drillings (Eds.), *Motivation: Theory and research* (pp. 31–48). Hillsdale, NJ: Erlbaum.
- Graham, S., & Hoehn, S. (1995). Children's understanding of aggression and withdrawal as social stigmas: An attributional analysis. *Child Development, 66*, 1143–1161.
- Graham, S., & Weiner, B. (1991). Testing judgments about attribution-emotion-action linkages: A lifespan approach. *Social Cognition, 9*, 254–276.
- Grice, H. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Vol. 3. Speech acts* (pp. 41–58). New York: Academic Press.
- Grusec, J. E. (1991). Socializing concern for others in the home. *Developmental Psychology, 27*, 338–342.
- Grusec, J. E., Kuczynski, L., Rushton, J. P., & Simutis, Z. M. (1978).

- Modeling, direct instruction, and attributions: Effects on altruism. *Developmental Psychology*, *14*, 51–57.
- Grusec, J. E., & Redler, E. (1980). Attribution, reinforcement, and altruism: A developmental analysis. *Developmental Psychology*, *16*, 525–534.
- Harackiewicz, J. M. (1979). The effects of reward contingency and performance feedback on intrinsic motivation. *Journal of Personality and Social Psychology*, *37*, 1352–1363.
- Harackiewicz, J. M., Barron, K. E., & Elliot, A. J. (1998). Rethinking achievement goals: When are they adaptive for college students and why? *Educational Psychologist*, *33*, 1–21.
- Harackiewicz, J. M., & Manderlink, G. (1984). A process analysis of the effects of performance-contingent rewards on intrinsic motivation. *Journal of Experimental Social Psychology*, *20*, 531–551.
- Harackiewicz, J. M., Manderlink, G., & Sansone, C. (1984). Rewarding pinball wizardry: The effects of evaluation on intrinsic interest. *Journal of Personality and Social Psychology*, *47*, 287–300.
- Harari, O., & Covington, M. V. (1981). Reactions to achievement behavior from a teacher and student perspective: A developmental analysis. *American Educational Research Journal*, *18*, 15–28.
- Harris, R. R., Wolf, M. M., & Baer, D. M. (1967). Effects of adult social reinforcement of child behavior. In W. W. Hartup & N. L. Smothergill (Eds.), *The young child: Reviews of research* (pp. 13–26). Washington, DC: National Association for the Education of Young Children.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Heine, S. J., Kitayama, S., Lehman, D., Takata, T., & Ide, E. (1998, August). *Self-enhancement and self-improvement—Two ways to motivate the self*. Paper presented at the Stanford Mini-Conference on Culture, Stanford, CA.
- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, *106*, 766–794.
- Henderlong, J. (2000). *Beneficial and detrimental effects of praise on children's motivation: Performance versus person feedback*. Unpublished doctoral dissertation, Stanford University.
- Hennessey, B. A., Amabile, T. M., & Martinage, M. (1989). Immunizing children against the negative effects of reward. *Contemporary Educational Psychology*, *14*, 212–227.
- Holt, J. (1982). *How children fail* (Rev. ed.). New York: Dell.
- Jensen, R. E., & Moore, S. G. (1977). The effect of attribute statements on cooperativeness and competitiveness in school-age boys. *Child Development*, *48*, 305–307.
- Jones, E. E. (1964). *Ingratiation: A social-psychological analysis*. New York: Appleton.
- Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 219–266). New York: Academic Press.
- Juvonen, J. (2000). Social functions of attribution face-saving tactics among early adolescents. *Educational Psychology Review*, *12*, 15–32.
- Kamins, M. L., & Dweck, C. S. (1999). Person versus process praise and criticism: Implications for contingent self-worth and coping. *Developmental Psychology*, *35*, 835–847.
- Kanouse, D. E., Gumpert, P., & Canavan-Gumpert, D. (1981). The semantics of praise. In J. H. Harvey, W. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 3, pp. 97–115). Hillsdale, NJ: Erlbaum.
- Karniol, R., & Ross, M. (1976). The developmental of causal attributions in social perception. *Journal of Personality and Social Psychology*, *34*, 455–464.
- Karniol, R., & Ross, M. (1979). Children's use of a causal attribution schema and the inference of manipulative intentions. *Child Development*, *50*, 463–468.
- Kast, A., & Connor, K. (1988). Sex and age differences in responses to informational and controlling feedback. *Personality and Social Psychology Bulletin*, *14*, 514–523.
- Kastelen, L., Nickel, M., & McLaughlin, T. F. (1984). A performance feedback system: Generalization of effects across tasks and time with eighth-grade English students. *Education and Treatment of Children*, *7*, 141–155.
- Kazdin, A. E. (1981). Behavior modification in education: Contributions and limitations. *Developmental Review*, *1*, 34–57.
- Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska Symposium on Motivation* (Vol. 15, pp. 192–240). Lincoln: University of Nebraska Press.
- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist*, *28*, 107–128.
- Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*, 254–284.
- Koestner, R., Zuckerman, M., & Koestner, J. (1987). Praise, involvement, and intrinsic motivation. *Journal of Personality and Social Psychology*, *53*, 383–390.
- Koestner, R., Zuckerman, M., & Koestner, J. (1989). Attributional focus of praise and children's intrinsic motivation: The moderating role of gender. *Personality and Social Psychology Bulletin*, *15*, 61–72.
- Koestner, R., Zuckerman, M., & Olsson, J. (1990). Attributional style, comparison focus of praise, and intrinsic motivation. *Journal of Research in Personality*, *24*, 87–100.
- Kohn, A. (1986). *No contest: The case against competition*. Boston: Houghton Mifflin.
- Kohn, A. (1993). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes*. New York: Houghton Mifflin.
- Kohn, A. (1996). By all available means: Cameron and Pierce's defense of extrinsic motivators. *Review of Educational Research*, *66*, 1–4.
- Kruglanski, A. W. (1978). Endogenous attribution and intrinsic motivation. In M. R. Lepper & D. Greene (Eds.), *The hidden costs of reward: New perspectives on the psychology of human motivation* (pp. 85–107). Hillsdale, NJ: Erlbaum.
- Lepper, M. R., Drake, M. F., & O'Donnell-Johnson, T. (1997). Scaffolding techniques of expert human tutors. In K. Hogan & M. Pressley (Eds.), *Scaffolding student learning: Instructional approaches and issues* (pp. 108–144). Cambridge, MA: Brookline Books.
- Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic motivation with extrinsic reward: A test of the "over-justification" hypothesis. *Journal of Personality and Social Psychology*, *28*, 129–137.
- Lepper, M. R., & Henderlong, J. (2000). Turning "play" into "work" and "work" into "play": 25 years of research on intrinsic versus extrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 257–307). San Diego, CA: Academic Press.
- Lepper, M. R., Henderlong, J., & Gingras, I. (1999). Understanding the effects of extrinsic rewards on intrinsic motivation—Uses and abuses of meta-analysis: Comment on Deci, Koestner, and Ryan (1999). *Psychological Bulletin*, *125*, 669–676.
- Lepper, M. R., Keavney, M., & Drake, M. (1996). Intrinsic motivation and extrinsic rewards: A commentary on Cameron and Pierce's meta-analysis. *Review of Educational Research*, *66*, 5–32.
- Lepper, M. R., Sagotsky, G., Dafoe, J. L., & Greene, D. (1982). Consequences of superfluous social constraints: Effects on young children's social inferences and subsequent intrinsic interest. *Journal of Personality and Social Psychology*, *42*, 51–64.
- Lepper, M. R., & Woolverton, M. (2002). The wisdom of practice: Lessons learned from the study of highly effective tutors. In J. Aronson (Ed.),

- Improving academic achievement: Contributions of social psychology* (pp. 135–158). Orlando, FL: Academic Press.
- Lepper, M. R., Woolverton, M., Mumme, D. L., & Gurtner, J. (1993). Motivational techniques of expert human tutors: Lessons for the design of computer-based tutors. In S. P. Lajoie & S. J. Derry (Eds.), *Computers as cognitive tools* (pp. 75–105). Hillsdale, NJ: Erlbaum.
- LeVine, R. A. (1989). Cultural environments in child development. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 52–68). San Francisco: Jossey-Bass.
- Lewis, C. C. (1995). *Educating hearts and minds: Reflections on Japanese preschool and elementary education*. Cambridge, England: Cambridge University Press.
- Madsen, C. H., Becker, W. C., & Thomas, D. R. (1977). Rules, praise, and ignoring: Elements of elementary classroom control. In K. D. O'Leary & S. G. O'Leary (Eds.), *Classroom management: The successful use of behavior modification* (2nd ed., pp. 63–84). New York: Pergamon Press.
- Malone, T. W., & Lepper, M. R. (1987). Making learning fun: A taxonomy of intrinsic motivations for learning. In R. E. Snow & M. J. Farr (Eds.), *Aptitude, learning and instruction: III. Cognitive and affective process analysis* (pp. 223–253). Hillsdale, NJ: Erlbaum.
- Maynard, A. (2002). Cultural teaching: The development of teaching skills in Maya sibling interactions. *Child Development, 73*, 969–982.
- McAllister, L. W., Stachowiak, J. G., Baer, D. M., & Conderman, L. (1969). The application of operant conditioning techniques in a secondary school classroom. *Journal of Applied Behavior Analysis, 2*, 277–285.
- McKay, J. (1992). Building self-esteem in children. In M. McKay & P. Fanning (Eds.), *Self-esteem* (2nd ed., pp. 239–271). Oakland, CA: New Harbinger.
- Meyer, W.-U. (1992). Paradoxical effects of praise and criticism on perceived ability. In W. Strobe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 3, pp. 259–283). Chichester, England: Wiley.
- Meyer, W.-U., Bachmann, M., Biermann, U., Hempelmann, M., Ploger, F.-O., & Spiller, H. (1979). The informational value of evaluative behavior: Influences of praise and blame on perceptions of ability. *Journal of Educational Psychology, 71*, 259–268.
- Meyer, W.-U., Mittag, W., & Engler, U. (1986). Some effects of praise and blame on perceived ability and affect. *Social Cognition, 4*, 293–308.
- Miller, R. L., Brickman, P., & Bolen, D. (1975). Attribution versus persuasion as a means for modifying behavior. *Journal of Personality and Social Psychology, 31*, 430–441.
- Miller, A. T., & Hom, H. L. (1997). Conceptions of ability and the interpretation of praise, blame, and material rewards. *Journal of Experimental Education, 65*, 163–177.
- Mills, R. S., & Grusec, J. E. (1989). Cognitive, affective, and behavioral consequences of praising altruism. *Merrill-Palmer Quarterly, 35*, 299–326.
- Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75*, 33–52.
- Nicholls, J. G. (1978). The development of the concepts of effort and ability, perception of academic attainment, and the understanding that difficult tasks require more ability. *Child Development, 49*, 800–814.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328–346.
- Nicholls, J. G., & Miller, A. T. (1984). Reasoning about the ability of self and others: A developmental study. *Child Development, 55*, 1990–1999.
- O'Leary, K. D., & O'Leary, S. G. (1977). *Classroom management: The successful use of behavior modification* (2nd ed.). New York: Pergamon Press.
- Pallak, S. R., Costomiris, S., Sroka, S., & Pittman, T. S. (1982). School experience, reward characteristics, and intrinsic motivation. *Child Development, 53*, 1382–1391.
- Parsons, J. E., Kaczala, C. M., & Meece, J. L. (1982). Socialization of achievement attitudes and beliefs: Classroom influences. *Child Development, 53*, 322–339.
- Pittman, T. S., Davey, M. E., Alafat, K. A., Wetherill, K. V., & Kramer, N. A. (1980). Informational versus controlling verbal reward. *Personality and Social Psychology Bulletin, 6*, 228–233.
- Pretty, G. H., & Seligman, C. (1984). Affect and the overjustification effect. *Journal of Personality and Social Psychology, 46*, 1241–1253.
- Rowe, M. B. (1974). Relation of wait-time and rewards to the development of language, logic, and fate control: II. Rewards. *Journal of Research in Science Teaching, 11*, 291–308.
- Ruble, D. N., Boggiano, A. K., Feldman, N. S., & Loebel, J. H. (1980). Developmental analysis of the role of social comparison in self-evaluation. *Developmental Psychology, 16*, 105–115.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
- Ryan, R. M., Mims, V., & Koestner, R. (1983). Relation of reward contingency and interpersonal context to intrinsic motivation: A review and test using cognitive evaluation theory. *Journal of Personality and Social Psychology, 45*, 736–750.
- Salili, F. (1996). Learning and motivation: An Asian perspective. *Psychology and Developing Societies, 8*, 55–81.
- Salili, F., & Hau, K. T. (1994). The effect of teachers' evaluative feedback on Chinese students' perceptions of ability: A cultural and situational analysis. *Educational Studies, 20*, 223–236.
- Salili, F., Hwang, C. E., & Choi, N. F. (1989). Teachers' evaluative behavior: The relationship between teachers' comments and perceived ability in Hong Kong. *Journal of Cross-Cultural Psychology, 20*, 115–132.
- Sansone, C. S. (1986). A question of competence: The effects of competence and task feedback on intrinsic interest. *Journal of Personality and Social Psychology, 51*, 918–931.
- Sansone, C. S. (1989). Competence feedback, task feedback, and intrinsic interest: An examination of process and context. *Journal of Experimental Social Psychology, 25*, 343–361.
- Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego, CA: Academic Press.
- Sarafino, E. P., Russo, A., Barker, J., Consentino, A., & Titus, D. (1982). The effect of rewards on intrinsic interest: Developmental changes in the underlying processes. *The Journal of Genetic Psychology, 141*, 29–39.
- Scheer, R. R. (1977). The relative effects of general versus descriptive praise on a card sorting task (Doctoral dissertation, University of Maryland, 1976). *Dissertation Abstracts International, 37*, 7049.
- Schunk, D. H. (1983). Ability versus effort attributional feedback: Differential effects on self-efficacy and achievement. *Journal of Educational Psychology, 75*, 848–856.
- Schunk, D. H. (1984). Sequential attributional feedback and children's achievement behaviors. *Journal of Educational Psychology, 76*, 1159–1169.
- Schunk, D. H., & Cox, P. D. (1986). Strategy training and attributional feedback with learning disabled students. *Journal of Educational Psychology, 78*, 201–209.
- Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist, 32*, 195–208.
- Shanab, M. E., Peterson, D., Dargahi, S., & Deroian, P. (1981). The effects of positive and negative verbal feedback on the intrinsic motivation of male and female subjects. *Journal of Social Psychology, 115*, 195–205.
- Sharpley, C. F. (1988). Effects of varying contingency and directness of rewards upon children's performance under implicit reward conditions. *Journal of Experimental Child Psychology, 45*, 422–437.
- Smith, M. C. (1975). Children's use of the multiple sufficient cause schema in social perception. *Journal of Personality and Social Psychology, 32*, 737–747.

- Stevenson, H. W., Lee, S., Chen, C., Stigler, J. W., Hsu, C. C., & Kitamura, S. (1990). Contexts of achievement: A study of American, Chinese, and Japanese children. *Monographs of the Society for Research in Child Development*, 55(1-2, Serial No. 221).
- Stevenson, H. W., & Stigler, J. W. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education*. New York: Simon & Schuster.
- Stipek, D. (2002). *Motivation to learn: Integrating theory and practice* (4th ed.). Boston: Allyn & Bacon.
- Stipek, D., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development*, 60, 521-538.
- Swann, W. B., & Pittman, T. S. (1977). Initiating play activity of children: The moderating influence of verbal cues on intrinsic motivation. *Child Development*, 48, 1128-1132.
- Tang, S.-H., & Hall, V. C. (1995). The overjustification effect: A meta-analysis. *Applied Cognitive Psychology*, 9, 365-404.
- Ward, J. (1976). Behaviour modification in education: An overview and a model for programme implementation. *Bulletin of the British Psychological Society*, 29, 257-268.
- Ward, M. H., & Baker, B. L. (1968). Reinforcement therapy in the classroom. *Journal of Applied Behavior Analysis*, 1, 323-328.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548-573.
- Weiner, B. (1992). *Human motivation: Metaphors, theories, and research*. Newbury Park, CA: Sage.
- Weiner, B. (1994). Integrating social and personal theories of achievement striving. *Review of Educational Research*, 64, 557-573.
- Weiner, B., & Kukla, A. (1970). An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology*, 15, 1-20.
- White, M. (1987). *The Japanese educational challenge: A commitment to children*. New York: Free Press.
- Winner, E. (1988). *The point of words: Children's understanding of metaphor and irony*. Cambridge, MA: Harvard University Press.
- Zinser, O., Young, J. G., & King, P. E. (1982). The influence of verbal reward on intrinsic motivation in children. *Journal of General Psychology*, 106, 85-91.

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Call for Nominations

The Publications and Communications (P&C) Board has opened nominations for the editorships of *Contemporary Psychology: APA Review of Books*, *Developmental Psychology*, and *Psychological Review* for the years 2005-2010. Robert J. Sternberg, PhD, James L. Dannemiller, PhD, and Walter Mischel, PhD, respectively, are the incumbent editors.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2004 to prepare for issues published in 2005. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Search chairs have been appointed as follows:

- ***Contemporary Psychology: APA Review of Books***: Susan H. McDaniel, PhD, and Mike Pressley, PhD
- ***Developmental Psychology***: Joseph J. Campos, PhD
- ***Psychological Review***: Mark I. Appelbaum, PhD

To nominate candidates, prepare a statement of one page or less in support of each candidate. Address all nominations to the appropriate search committee at the following address:

Karen Sellman, P&C Board Search Liaison
 Room 2004
 American Psychological Association
 750 First Street, NE
 Washington, DC 20002-4242

The first review of nominations will begin November 15, 2002. The deadline for accepting nominations is November 25, 2002.