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Intrinsic Versus Extrinsic Goal Contents in Self-Determination Theory: Another Look at the Quality of Academic Motivation

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Examination of motivational dynamics in academic contexts within self-determination theory has centered primarily around both the motives (initially intrinsic vs. extrinsic, later autonomous vs. controlled) that regulate learners' study behavior and the contexts that promote or hinder these regulations. Less attention has been paid to the goal contents (intrinsic vs. extrinsic) that learners hold and to the different goal contents that are communicated in schools to increase the perceived relevance of the learning. Recent field experiments are reviewed showing that intrinsic goal framing (relative to extrinsic goal framing and no-goal framing) produces deeper engagement in learning activities, better conceptual learning, and higher persistence at learning activities. These effects occur for both intrinsically and extrinsically oriented individuals. Results are discussed in terms of self-determination theory's concept of basic psychological needs for autonomy, competence, and relatedness.

The study of motivational processes and dynamics has received increased empirical attention within the field of educational psychology over the past decade (Murphy & Alexander, 2000; Pintrich, 2000). One theory that has proven useful in explaining the variation in students' learning strategies, performance, and persistence is self-determination theory (SDT; Deci & Ryan, 2000; R. M. Ryan & Deci, 2000a). In this article, we present a recent development within the theory that has both theoretical and practical potential for educational researchers and practitioners.

Traditionally, SDT researchers have been concerned primarily with examining the quality of learners' motivation. *Quality of motivation* refers to the type or kind of motivation that underlies learning behavior. It can be distinguished from the quantity, level, or amount of motivation that learners display for a particular learning activity (R. M. Ryan & Deci, 2000b; Vansteenkiste, Lens, De Witte, & Feather, 2005).

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A first attempt to deal with types or quality of motivation that guide students' learning consisted of exploring whether the learning was *intrinsically motivated* (i.e., was undertaken for its inherent interest and enjoyment) or was *extrinsically motivated* (i.e., was done to attain an outcome that is separable from the learning itself; Deci, 1971, 1975). A more refined conceptualization followed in which extrinsic motivation was differentiated into types of regulation that vary in their degree of relative autonomy (R. M. Ryan & Connell, 1989; R. M. Ryan & Deci, 2000b). With this extension, the primary focus changed to autonomous motivation versus controlled motivation. *Autonomous motivation* involves the experience of volition and choice, whereas *controlled motivation* involves the experience of being pressured or coerced. Intrinsic motivation and well-internalized forms of extrinsic motivation are considered autonomous, whereas poorly internalized forms of extrinsic motivation are considered controlled (Deci & Ryan, 1985).

SDT research also focused on the interpersonal environment and the effects of that environment on autonomous and controlled motivation. Specifically, social contexts (e.g., classroom climates) are characterized in terms of the degree

to which they are autonomy-supportive versus controlling, with research confirming that autonomy-supportive contexts enhance autonomous motivation whereas controlling contexts diminish autonomous motivation and enhance controlled motivation (e.g., Deci, Eghrari, Patrick, & Leone, 1994; Grolnick & Ryan, 1989).

A second, more recent, and complementary approach to conceptualizing learners' quality of motivation consisted of considering the content of the goals students value. Within SDT, intrinsic goals, such as growth, relationships, and community, were distinguished from extrinsic goals, such as wealth, fame, and image. This line of work, begun by Kasser and Ryan (1993, 1996), examined individual differences in the life goals that people held and related them to their well-being and adjustment. The relative importance of extrinsic goals related negatively to well-being and the relative importance of intrinsic goals related positively to well-being. Even more recently, a number of experimental field studies have explored the consequences for learning, achievement, and persistence of intrinsic versus extrinsic goals manipulated experimentally (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004).

Moreover, many of the experiments that manipulated intrinsic versus extrinsic goals also examined the effects of framing those goal orientations within autonomy-supportive versus controlling social contexts. Our aims in the present article are to present these new developments within SDT and to clarify how intrinsic versus extrinsic goals are different from (although conceptually related to) autonomous versus controlled motivation (Sheldon, Ryan, Deci, & Kasser, 2004). We also address some critiques of the SDT intrinsic versus extrinsic goal perspective and finish by providing a number of recommendations for application in classroom settings.

THE REGULATION OF BEHAVIOR

From Intrinsic Versus Extrinsic Motivation to Autonomous Versus Controlled Regulation

The concept of intrinsic motivation emerged from the work of Harlow (1953) and White (1959) in opposition to the behavioral theories that were dominant at the time. *Intrinsically motivated behaviors* were defined as those that are not energized by physiological drives or their derivatives and for which the reward is the satisfaction associated with the activity itself. Intrinsic motivation thus represents engagement in an activity for its own sake (Deci, 1971, 1975). At that time, intrinsic motivation was contrasted with extrinsic motivation. *Extrinsically motivated behavior* is defined as engaging in an activity to obtain an outcome that is separable from the activity itself (deCharms, 1968; Lepper & Greene, 1978). Thus, extrinsically motivated behaviors are characterized by a means–end structure and are instrumental for some separable consequence (Eccles & Wigfield, 2002; Husman & Lens, 1999; Simons, Vansteenkiste, Lens, & Lacante, 2004).

Within SDT, intrinsic motivation is seen as the motivational instantiation of the proactive, growth-oriented nature of human beings. Indeed, intrinsically motivated activity is the natural basis for learning and development. White (1959) suggested that a need for competence underlies intrinsic motivation, that people engage in many activities in order to experience a sense of effectance and competence. Later, deCharms (1968) proposed that people have a primary motivational propensity to engage in activities that allow them to feel a sense of personal causation and that this is the basis of intrinsic motivation. Similarly, Nuttin (1973) argued that individuals experience 'causality pleasure' when they perceive themselves as the initiator of their behavior. These authors together were thus proposing that the needs for competence and personal causation (which is closely related to the concept of autonomy) are the energizing bases for intrinsically motivated behavior.

In the 1970s several researchers examined intrinsic motivation, particularly with respect to the effects of external motivators on intrinsic motivation (Deci, 1971, 1972; Kruglanski, Freedman, & Zeevi, 1971; Lepper, Greene, & Nisbett, 1973). In the first of these early studies, Deci (1971) rewarded some participants for engaging in an intrinsically interesting activity and observed that rewarded participants enjoyed the activity less and showed less subsequent behavioral persistence than did nonrewarded participants. This finding is particularly interesting because it is an instance in which people are approaching outcomes they value, but the process of doing so has a negative effect on the prototype of their proactive, growth-oriented nature. Deci interpreted this undermining of intrinsic motivation as indicating that the participants' behavior, which had initially been intrinsically motivated, became controlled by the reward, so their sense of autonomy was undermined. Because extrinsic rewards are so often used as instruments of social control (Luyten & Lens, 1981), they can leave people feeling like pawns to the rewards (deCharms, 1968) and thus thwart their need for autonomy (Deci, Koestner, & Ryan, 1999). Additional studies showed that other external factors such as deadlines (Amabile, DeJong, & Lepper, 1976), surveillance (Enzle & Anderson, 1993), testing (Grolnick & Ryan, 1987), and controlling language (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004) all undermined individuals' inherent interest and subsequent persistence at the activity.

Initial conceptualizations viewed intrinsic and extrinsic motivation as being invariantly antagonistic (e.g., de Charms, 1968; Lepper & Greene, 1978). Intrinsic motivation was considered self-determined, whereas extrinsic motivation was thought to reflect a lack of self-determination. However, later research (Koestner, Ryan, Bernieri, & Holt, 1984; R. M. Ryan, 1982; R. M. Ryan, Mims, & Koestner, 1983) has indicated that extrinsic motivation does not necessarily undermine intrinsic motivation and that it may even enhance it (Luyten & Lens, 1981), implying that extrinsic motivation is not invariantly controlled. These findings resulted in a more refined analysis

of extrinsic motivation. Specifically, various types of extrinsic motivation were distinguished that differ in their degree of autonomy or self-determination, depending on the extent to which people have been successful in internalizing the initially external regulation of the behavior (Deci & Ryan, 1985; R. M. Ryan & Connell, 1989; R. M. Ryan, Connell, & Deci, 1985). This process of *internalization*, we maintain, represents a second instantiation (in addition to intrinsic motivation) of the growth-oriented endowment of human beings, and the process can function more or less successfully.

The least autonomous form of extrinsic motivation is referred to as *external regulation*. In this case, the behavior is prompted by external contingencies, such as rewards, punishments, and deadlines, and the contingencies or reasons for performing the behavior have not been internalized at all. Because externally regulated action is experienced as coerced and determined by external forces, it is represented by an external perceived locus of causality (deCharms, 1968). For example, students who study primarily because they know their parents will reward them for doing well are externally regulated.

In the case of *introjected regulation*, a second type of extrinsic motivation, people engage in an activity to comply with internal pressure, which is based either in the pursuit of self-aggrandizement and (contingent) self-worth or in the avoidance of feelings of guilt and shame. With introjection, regulation of the behavior has been partially internalized, and hence is within the person, but the person has not accepted it as his or her own. Therefore, the activity does not emanate from the person's sense of self and is experienced as being pressured or coerced. Introjected regulation is also represented by an external perceived locus of causality (deCharms, 1968) and is often combined with external regulation to form a controlled motivation composite (e.g., Vallerand et al., 1997). A student who studies before going to play soccer because he or she would feel guilty if he or she did not would be displaying introjected regulation.

Identification refers to the process of identifying with the value of an activity and thus accepting regulation of the activity as one's own. When people are able to foresee the personal relevance of an activity for themselves, they are likely to identify with its importance, so they will engage in the activity quite volitionally or willingly. Identification represents a fuller form of internalization that is characterized by an internal perceived locus of causality. Although still extrinsic in nature, identified regulation is relatively volitional and in this sense approximates intrinsic motivation, so these two types of motivation are sometimes combined into a composite of autonomous motivation (e.g., Black & Deci, 2000; Vansteenkiste, Lens, Dewitte, De Witte, & Deci, 2004). A student who studies statistics because he or she has accepted the importance of statistics for his or her self-selected goal of doing empirical psychology will be regulating his or her study behavior through identification.

Internalization, which is a central process for socialization, is theorized by SDT to be energized by the human psychological needs for competence, autonomy, and relatedness (Grolnick, Deci, & Ryan, 1997). Just as with intrinsic motivation, competence and autonomy are considered important energizers of internalization, but the need for relatedness (Baumeister & Leary, 1995) is also critically important for internalization (Deci & Ryan, 2000; R. M. Ryan, 1995). Indeed, it is out of the desire to be related to others, to feel part of a family, group, or social order, that individuals are inclined to take on the values, beliefs, and behaviors that are endorsed by those others. Accordingly, for students to internalize the norms, standards, and regulations that are typically transmitted through schooling, these will need to be presented in a way that facilitates the students' feelings of relatedness, competence, and autonomy with respect to the relevant behaviors.[1]

It is worth noting that internalization as conceived by SDT does not imply that people must invariantly move through each type of regulation for a particular behavior. The theory specifies these types of regulation to index the degree to which people have internalization of a behavioral regulation. Thus, under optimal conditions, people can, at any time, fully internalize a new regulation, or they can fully internalize a regulation that had been only partially internalized.

A number of previous studies have documented manifold advantages of autonomous relative to controlled motivation for learning, including decreased drop-out (Vallerand et al., 1997), more deep learning (Grolnick & Ryan, 1987), greater creativity (Koestner et al., 1984), less superficial information processing (Vansteenkiste, Simons, Lens, Sheldon, et al., 2004), higher achievement (Boggiano, Flink, Shields, Seelback, & Barrett, 1993; Soenens & Vansteenkiste, 2005), and enhanced well-being (Black & Deci, 2000; Levesque, Zuehlke, Stanek, & Ryan, 2004). These general findings (see Reeve, Deci, & Ryan, 2004, for a recent review) have been replicated in collectivistic societies, such as Russia (Chirkov & Ryan, 2001) and China (Vansteenkiste, Zhou, Lens, & Soenens, 2005).

Autonomy-Supportive Versus Controlling Social Environments

Because learning out of inherent interest or internalized values yields many advantages, SDT researchers have explored how social contexts can promote autonomous motivation and its adaptive qualities. Many studies have focused on aspects of the social context that make it autonomy-supportive versus controlling. In *autonomy-supportive contexts*, instructors empathize with the learner's perspective, allow opportunities for self-initiation and choice, provide a meaningful rationale if choice is constrained, refrain from the use of pressures and contingencies to motivate behavior, and provide timely positive feedback (Deci et al., 1994).

[1]Notably, like the theories that consider only the quantity and not the quality of motivation, SDT also considers the degree to which a person is or is not motivated for an activity. When people display a lack of motivation, because they feel unable to achieve a desired outcome or to do the activity effectively, they are said to be *amotivated*.

Such contexts stand in contrast with *controlling contexts*, which tend to pressure individuals to think, act, or feel in particular ways. Two types of controlling contexts have been differentiated, namely, externally controlling and internally controlling contexts. *Externally controlling environments* pertain to the use of overtly coercive strategies, such as salient reward contingencies, deadlines, and overtly controlling language (e.g., the use of "have to," "should," and "ought"). Such strategies place learners under pressure to engage in the learning by inducing externally controlled regulation. However, learners can also easily place themselves under pressure to engage in a particular activity, and these pressures are referred to as *internal controls*. SDT holds that the social environment can quite easily trigger these controlling processes that reside within individuals and can regulate their behavior. For instance, introjected regulations, which are a type of internal controls, can be primed by guilt-inducing strategies, shaming procedures, and the use of conditional regard (Assor, Roth, & Deci, 2004).

According to SDT, the more autonomy-supportive the social context the more it maintains or enhances intrinsic motivation and the more it facilitates the internalization and integration of extrinsic motivation because such contexts tend to satisfy rather than thwart the learners' basic psychological needs. Intrinsic and well-internalized extrinsic motivations, in turn, are expected to promote adaptive learning outcomes. For example, if students are criticized when they attempt a new behavior, they are less likely to persist in their attempts to internalize its regulation or to develop inherent interest for it, presumably because their need for competence gets forestalled. Furthermore, for students to identify with behavioral regulations and to fully assimilate them within the self, it is important for instructors to support the learners' autonomy with respect to the behaviors. When socializing agents use either overt or subtle controlling tactics, such as conditional regard (Assor et al., 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005), students tend to show impoverished and fragmented forms of internalization and they fail to find interest in the activity.

Consistent with these propositions, a variety of experimental and correlational research has demonstrated that autonomy-supportive environments are associated with various benefits, including academic competence, school achievement, and higher well-being (Allen, Hauser, Bell, & O'Connor, 1994; Boggiano et al., 1993; Grolnick, Ryan, & Deci, 1991; Levesque et al., 2004; Soenens & Vansteenkiste, 2005), whereas such contexts negatively predict maladjustment, as indexed by distress in emotion regulation and acting out and by learning problems (Grolnick, Kurowski, Dunlap, & Hevey, 2000; Grolnick, Kurowski, McMenamy, Rivkin, & Bridges, 1998). Conversely, controlling contexts have been associated with reduced conceptual learning and lower achievement (Aunola & Nurmi, in press; Benware & Deci, 1984; Grolnick & Ryan, 1987) and have been linked to depression and lower self-esteem (Barber, Olson, & Shagle, 1994; Soenens, Vansteenkiste, Duriez, Luyten, & Goossens, 2005). The negative effects of control, relative to autonomy support, have been replicated across different age groups, and even 1-year-old infants have been found to show less subsequent free-choice play behavior when their mothers were rated by observers as controlling (Grolnick, Frodi, & Bridges, 1984).

In summary, the initial dichotomous conceptualization of intrinsic and extrinsic motivation was replaced by a more differentiated view that considers the extent to which learners' study behavior is guided by autonomous regulation or controlled regulation (i.e., motives). Simultaneously, SDT researchers have detailed the social antecedents that support autonomous versus controlled behavior and thus that induce the two types of regulation. In addition to an examination of the reasons or motives (i.e., the regulations) that underlie students' goal pursuits (i.e., the "why" of their goals), SDT (Kasser & Ryan, 1993, 1996) has recently begun to focus on the content of the goals people pursue (i.e., the "what" of their goals). Specifically, the what of people's goals is addressed with the distinction between intrinsic and extrinsic goals or goal contents. This more recent conceptual development, together with its implications for educational psychologists, is described next.

GOALS OF BEHAVIOR

Intrinsic Versus Extrinsic Personal Goals

Within SDT, *intrinsic goals*, such as community contribution, health, personal growth, and affiliation, are differentiated from *extrinsic goals*, such as fame, financial success, and physical appearance. Consistent with organismic theorizing (R. M. Ryan & Deci, 2000a, 2000b), the former goals are labeled *intrinsic* because they are satisfying in their own right and they provide direct satisfaction of basic psychological needs. Hence, they are expected to be positively related to psychological well-being and positive adjustment. The pursuit of intrinsic goals is considered a third manifestation of the natural growth orientation (in addition to the processes of intrinsic motivation and internalization). In contrast, extrinsic goals have an "outward" orientation (Williams, Cox, Hedberg, & Deci, 2000) or a "having" orientation (Fromm, 1976; Van Boven & Gilovich, 2003) that is concerned with external manifestations of worth rather than with basic need satisfaction.[2]

[2]The concept of extrinsic goals has been introduced by a few achievement goal theorists as well (e.g., Ames, 1992; Maehr, 1984; Patrick, Ryan, & Pintrich, 1999; Urdan & Maehr, 1995). An *extrinsic goal orientation* is defined as the desire to engage in learning tasks to garner consequences external to the task itself, such as receiving rewards or avoiding punishment. It was found to predict a variety of negative outcomes, including cheating, avoidance of help seeking, the use of self-handicapping strategies, and less use of regulatory and cognitive strategies (Anderman, Griesinger, & Westerfield, 1998; Midgley & Urdan, 1995; Patrick et al., 1999; A. M. Ryan & Pintrich, 1997). From the perspective of SDT, however, this conceptualization of "extrinsic goals" concerns the reasons or motives for studying (i.e., the studying is extrinsically motivated, and, more specifically, involves external and thus controlled regulation). It does not pertain to the goal content (i.e., it does not specify that people are learning in order, for example, to amass wealth in the future).

When people are focused on extrinsic goals, they tend to be more oriented toward interpersonal comparisons (Patrick, Neighbours, & Knee, 2004; Sirgy, 1998), contingent approval (Kernis, 2003), and acquiring external signs of self-worth (Kasser, Ryan, Couchman, & Sheldon, 2004). Hence, extrinsic goal pursuits tend to be associated with poorer well-being and less optimal functioning than do intrinsic goal pursuits (Kasser & Ryan, 1996).

Consistent with these claims, several correlational studies have provided evidence that when people report strong aspirations for extrinsic, relative to intrinsic, life goals, they tend also to have lower life satisfaction, self-esteem, and self-actualization; higher depression and anxiety; poorer relationship quality; less cooperative behavior; and greater prejudice and social-dominant attitudes (e.g., Duriez, Vansteenkiste, Soenens, & De Witte, 2004; Kasser & Ryan, 1993, 1996; McHoskey, 1999; Sheldon & McGregor, 2000; Sheldon, Sheldon, & Osbaldiston, 2000; Vansteenkiste, Duriez, Simons, & Soenens, in press). This basic pattern has been replicated in various cultures and in various age groups (Kasser & Ryan, 1996; R. M. Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999).

The concept of goal content (intrinsic vs. extrinsic) is quite different from the concept of *goal motive* (autonomous vs. controlled), which represents the reasons why people are pursuing the particular goal contents (Deci & Ryan, 2000). For example, students could have an after-school job to earn money (extrinsic goal content) because they feel pressured by their parents (controlled motive) or because they value going to college and will need the money (autonomous motive). Previous research (Sheldon & Kasser, 1995) demonstrated that, on average, the pursuit of intrinsic goals tends to be correlated with having autonomous motives (i.e., intrinsic interest or internalized importance), whereas the pursuit of extrinsic goal contents tends to be associated with controlled motives (i.e., external or introjected reasons). Nonetheless, research has made clear that goal content and goal motives do predict independent variance in well-being and adjustment (Sheldon et al., 2004). In multiple studies these authors had intrinsic (vs. extrinsic) goal importance compete for variance with autonomous (vs. controlled) motives, and consistently both concepts predicted significant independent variance in psychological well-being.

In all of the aforementioned research, the measured outcomes concerned psychological health and adjustment in relationships. Only very recently have these differential goal contents been linked to academically relevant outcomes. For instance, Timmermans, Vansteenkiste, and Lens (2004) used Kasser and Ryan's (1993) aspiration index to assess students' intrinsic relative to extrinsic goals. Specifically, students rated the importance to them of attaining each of a set of extrinsic goal contents (e.g., wealth, fame, and image) and a set of intrinsic goal contents (e.g., affiliation, growth, and community). The researchers reported that the relative strength of the extrinsic goals of the 1st-year college students was related to signs of academic maladjustment. These findings provide initial evidence for the claim that learners' personal goals are not all created equal in the sense that the extrinsic versus intrinsic goals are associated with different academic outcomes (see R. M. Ryan, Sheldon, Kasser, & Deci, 1996). In short, some goals (viz., intrinsic goals) are more conducive to academic adjustment than are others (i.e., extrinsic goals), presumably because pursuit of the different goals is differentially linked to people's basic psychological need satisfaction.

Intrinsic Versus Extrinsic Goal Framing

Not only has the majority of the research just reviewed on intrinsic versus extrinsic goals focused on well-being outcomes rather than educational outcomes but it has also been done with individual differences in the strength of people's intrinsic versus extrinsic life goals. Only very recently has research begun to focus on the framing of students' learning activities in terms of intrinsic versus extrinsic goals—in other words, on the experimental manipulation of the goals that students are pursuing while doing an educationally relevant activity. For example, the learning of physical exercises has been framed in terms of the utility of attaining intrinsic goals versus extrinsic goals. The examination of these goal-content manipulations is relevant because different learning contexts do place different emphasis on intrinsic versus extrinsic goals. For example, business schools might tend to emphasize the extrinsic goal of making money, whereas education schools are more likely to emphasize the goal of contributing to the community. Just as the personal valuing of intrinsic versus extrinsic goals is associated with differential outcomes, contexts that place differential emphasis on these goal contents should also result in different learning outcomes. This general hypothesis has been tested in a series of field experiments done in school settings.

Each experiment framed students' learning in terms of whether it served a long-term intrinsic goal or a long-term extrinsic goal. Further, in each study, the goal content manipulation was crossed with a manipulation of whether the social context was autonomy supportive or controlling. It was expected, in line with SDT, that both the goal-content manipulation and the quality of the learning context within which the goal framing occurred would contribute independent variance to the prediction of learning, performance, and persistence.

In the first set of field experiments, Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004; Study 1) presented the learning of a reading activity on ecological issues in terms of either the attainment of saving money (an extrinsic goal) or in terms of contributing to the community (an intrinsic goal). The researchers reasoned that extrinsic goal framing would distract learners' attention from the learning task itself, thus interfering with a full absorption with the learning material; thus, they predicted poorer learning and performance in the extrinsic goal condition. In contrast, when the learning was portrayed as being useful for an intrinsic goal,

there is a closer link to people's inner growth tendencies and less focus on external indicators of worth, so the learning and performance should be better. To put it differently, intrinsic versus extrinsic goal framing was expected to result in a qualitatively different engagement in the learning activity, so it was predicted to differentially affect information processing and achievement.

In this study, the intrinsic–extrinsic goal framing was crossed with whether the interpersonal context was autonomy supportive or controlling. This manipulation was performed by making a few changes in the wording of the instructions—specifically, the autonomy-supportive instructions used language such as "you can" and "we suggest that you," and the controlling instructions used language such as "you have to" and "you should." In line with much past research (e.g., Grolnick & Ryan, 1987), it was expected that the autonomy-supportive context would lead to better learning and performance than the controlling context.

Consistent with the hypotheses, results indicated that intrinsic goal framing promoted deep-level processing (both self-reported and observed) and that test performance and subsequent free-choice persistence were greater in the intrinsic-goal condition than in the extrinsic-goal condition. Furthermore, students whose goal framing had occurred in an autonomy-supportive condition also evidenced enhanced deep processing, test performance, and persistence compared with those whose goal framing had been done in a controlling fashion. These results were replicated in other studies using different intrinsic goals (e.g., personal growth and health), different extrinsic goals (e.g., physical attractiveness), different learning materials (business communications), and different age groups (5th- to 6th-graders, 11th- to 12th-graders, college students), and they were also obtained when participants learned physical exercises rather than text material (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, et al., 2005).

Subsequent studies aimed to replicate and extend this basic set of findings. In one follow-up study in the physical exercise domain, Vansteenkiste, Simons, Soenens, et al. (2004) examined whether intrinsic versus extrinsic goal framing would differentially affect not only short-term persistence but also long-term persistence. Students in 10th to 12th grades were told that the learning of physical exercises was relevant either to the attainment of physical attractiveness (i.e., an extrinsic goal) or to the attainment of physical health and fitness (i.e., an intrinsic goal). Following their participation in the experiment, participants were asked to demonstrate the physical exercises 1 week, 1 month, and 4 months after the induction. At the 4-month assessment, participants also had the opportunity to sign up for a year-long course in one of the martial arts (tai-bo). The results fully replicated the Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) research, in which intrinsic goal framing resulted in superior performance and increased persistence over the short term (i.e., 1 week after the experiment). Further, intrinsic versus extrinsic goal framing positively predicted persistence at each of the follow-ups, and it also predicted participants' joining the year-long physical exercise course.

In another set of experimental studies, Vansteenkiste, Simons, et al. (2005) examined whether intrinsic versus extrinsic goal framing had a differential effect on two aspects of learning, that is, conceptual and rote learning. Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) had included self-reports of deep-level learning and superficial processing, but the tests tapped only conceptual learning. Extrinsic goals are expected to shift students' attention away from the learning task to the external indicators of worth and to narrow the students' focus to the instrumentality for the extrinsic outcomes. This rigid and strategic focus on the extrinsic goal was expected to result in memorization of the learning material but not conceptual understanding of it. Consistent with these hypotheses, it was found that extrinsic goal framing undermined conceptual learning across the three field studies but did not harm the children's rote learning. In fact, in two out of the five assessments of rote learning across three studies in the Vansteenkiste, Simons, et al. (2005) research, extrinsic goal framing (relative to intrinsic goal framing) was even found to enhance the literal and factual processing of material that is associated with rote learning. In the three other cases, no significant differences emerged between intrinsic and extrinsic goal framing on rote learning. These results indirectly suggest that the harmful effects of extrinsic goal framing might not be found for learning tasks that only require rote learning, but no research to date has directly tested this hypothesis.

Further, in each of the three studies reported in the Vansteenkiste, Simons, et al. (2005) research, goal contents had also been crossed with type of social context. When the goals were presented to children with autonomy-supportive language, the conceptual learning was greater than when it was presented with controlling language, although the rote memorization tended not to differ as a function of the style of presentation.

Goal Contents and Goal Contexts

Another important issue that has been examined in relation to this goals research is whether the relations of the goal contents to well-being and achievement outcomes are independent of the effects of the participants' autonomous versus controlled motivation for engaging in the goal-directed behaviors. This question arose in part from critiques of SDT by Carver and Baird (1998) and Srivastava, Locke, and Bartol (2001). These authors have argued that goal-content effects could be reduced to motive effects. In other words, Carver and Baird argued that people with extrinsic goals tend to be controlled in their self-regulation, and it is really the controlled regulatory style rather than the extrinsic goal contents that has the negative effects on well-being and performance. As a first response to these criticisms, Sheldon et al. (2004) demonstrated, as mentioned earlier, that, although in-

trinsic goal striving and autonomous regulation as well as extrinsic goal striving and controlled regulation were positively correlated, both regulatory styles and the goal contents have independent effects on well-being and adjustment.

The framing of learning activities in terms of intrinsic versus extrinsic goal contents provided a new opportunity to test these incompatible hypotheses. Specifically, because many studies (e.g., Pelletier, Fortier, Vallerand, & Brière, 2001; Vallerand et al., 1997) have confirmed that autonomy-supportive contexts tend to promote autonomous motivation and controlling contexts tend to promote controlled motivation, it is expected that autonomous motivation would mediate the effects of autonomy-supportive versus controlling contexts on the achievement outcomes. Further, if Carver and Baird (1998) were correct in their critique, the effects of intrinsic versus extrinsic goal framing on achievement outcomes would be fully mediated by autonomous motivation. In other words, the goal-content effect would be wholly reducible to the motivation (i.e., the self-regulatory style) that it was said to induce. According to SDT, however, intrinsic versus extrinsic goal framing should have an independent effect on learning after controlling for autonomous regulation, which would show up as only partial mediation.

The results of the Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) research indicated that (a) intrinsic goal content and autonomy support each had an independent, positive effect on autonomous motivation, deep learning, achievement, and persistence, and (b) the effect of intrinsic versus extrinsic goal framing on the learning outcomes could, in general, be only partially accounted for by autonomous motivation.

ALTERNATIVE ACCOUNTS OF INTRINSIC VERSUS EXTRINSIC GOAL FRAMING RESEARCH

Our interpretation of the findings that intrinsic goal framing leads to higher quality learning than does extrinsic goal framing is based on the SDT proposition that different types of motivation and, hence, different qualities of engagement with the learning materials are induced by these different goal-content manipulations. There are, however, two possible alternative explanations of the results.

The first derives from *expectancy-valence* theories (Atkinson & Feather, 1966; Eccles & Wigfield, 2002; Feather, 1982; Vroom, 1964) and instrumentality models (Husman & Lens, 1999; Lens, Simons, & Dewitte, 2001, 2002; Raynor, 1969). It suggests that intrinsic goal framing may have produced positive learning effects not because it prompted qualitatively different engagement with the learning activity, as was suggested by Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004), but because it resulted in higher overall value being placed on the learning than did extrinsic goal framing. According to this account, the beneficial effect of intrinsic goal framing would be a function of a larger quantity of motivation rather than a different quality of motivation.

The second alternative account suggests that the negative impact of extrinsic goal framing might be limited to intrinsically oriented individuals, so the main effect would have been carried by people who were high in intrinsic learning goals, as an individual difference. This represents a *match* perspective, in which intrinsically oriented individuals do better when exposed to an intrinsic goal message and extrinsically oriented individuals do better when exposed to an extrinsic goal message. We consider each of these explanations in turn.

The Expectancy-Valence and Instrumentality Accounts

Because intrinsic goals are, on average, more highly valued than extrinsic goals (Kasser, 2002), an expectancy-value approach would suggest that portraying a particular activity as serving the attainment of an intrinsic goal, relative to portraying it as serving an extrinsic goal, should increase the perceived value of the learning. With the value being greater for the intrinsic goal than the extrinsic goal, and assuming that expectancy is the same for the two goals, the motivation would be greater for the intrinsic goal because motivation is theorized to be a function of expectancy times value. The enhanced value and, thus, greater motivation with the intrinsic goal should result in greater attention and energy being put into the activity, which in turn should result in enhanced learning (Eccles & Wigfield, 2002; Phalet, Andriessen, & Lens, 2004; Simons et al., 2004).

Two studies were designed to test this interpretation. In the first, Vansteenkiste, Simons, Lens, Soenens, Matos, and Lacante (2004) included three goal content conditions, namely, an intrinsic goal condition, an extrinsic goal condition, and a condition in which both the intrinsic and the extrinsic goal framing rationale were presented. The reasoning was that, with both goals present in one condition, the learning should have greater value to the learners, so there should be greater motivation to learn in this dual-goal condition than in either of the single-goal conditions (Lens, 2001; Lens, Simons, & Dewitte, 2001, 2002). If the two-goal condition did not yield better learning and performance than the intrinsic or the extrinsic condition, it would indicate that the expectancy-value account of the intrinsic versus extrinsic goal framing findings is not reasonable. In contrast, SDT suggests that in the dual-goal condition the extrinsic goal would interfere with the quality of motivation prompted by the intrinsic goal, leading to poorer learning in the dual-goal condition than in the condition with just the intrinsic goal.

Results of the Vansteenkiste, Simons, Lens, Soenens, et al. (2004) study indicated that intrinsic goal framing led to better performance and persistence than did either the extrinsic goal framing condition or the two-goal framing condition. Moreover, in line with SDT's suggestion that intrinsic goal framing entails a different quality of motivation, it was found

that the intrinsic versus double goal framing effects on performance and persistence were fully mediated by participants' task-orientation, that is, by their motivation to master and fully understand the learning material (Ames, 1992; Butler, 1987; Nicholls, 1989; R. M. Ryan, 1982). Similarly, the negative effect of the extrinsic compared with the double-goal framing was also mediated by task-orientation; participants in the extrinsic goal condition obtained lower achievement scores because they were less oriented toward mastering the learning material.

In a second study, Vansteenkiste, Simons, Soenens, et al. (2004) compared the impact of intrinsic goal framing and extrinsic goal framing with a no-goal control group. According to expectancy and instrumentality theories, the extrinsic goal framing condition provides additional value or incentive for the learning task and should thus lead to better learning and performance than the no-goal condition, even if it leads to poorer learning than the intrinsic-goal condition (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). SDT, on the other hand, would predict that extrinsic goal framing might well lead to poorer learning than no goal framing because extrinsic goal framing shifts learners' attention away from the learning to the external indicators of worth, thereby hindering a full involvement in the learning.

These hypotheses were tested in the exercise domain by Vansteenkiste, Simons, Soenens, et al. (2004). Participants were told that learning physical exercises was useful for attaining an extrinsic goal (i.e., physical attractiveness) or an intrinsic goal (i.e., physical health), or they were not told anything about the relevance of the learning activity. Results showed that intrinsic goal framing, relative to no goal framing, led to higher autonomous motivation and better test performance, and it also resulted in greater persistence both in the short term and the long term. In contrast, extrinsic goal framing, relative to no goal framing, undermined participants' autonomous motivation, performance, and long-term persistence, although it resulted in better short-term persistence. The latter result makes sense in that extrinsic goals can be powerful motivators, especially of rote learning, but the persistence is expected to be of a different quality and not to be maintained over the long term (Vansteenkiste, Simons, et al., 2005).

More specifically, because participants in the extrinsic goal condition adopt a more rigid and narrow approach to the learning material, the learning is less likely to be experienced as enjoyable and meaningful to them. Hence, persistence under extrinsic goal circumstances is likely to be motivated less by autonomy than is persistence under intrinsic goal circumstances. To examine this reasoning, additional analyses were performed. Within-cell correlations between self-reported autonomous motivation for doing the exercises and behavioral persistence at each time point were calculated (for additional examples of this approach, see also R. M. Ryan, Koestner, & Deci, 1991; Vansteenkiste & Deci, 2003). Vansteenkiste, Simons, Soenens, and Lens (2004) found that, in the intrinsic-goal condition, participants' persistence was positively correlated with autonomous motivation at all three assessment points, whereas in the extrinsic-goal condition participants' persistence was uncorrelated with autonomous motivation at all three points. In short, students' persistence in the intrinsic condition was based in their intrinsic valuing and enjoyment of the learning material, but in the extrinsic goal condition participants persisted for other reasons, presumably unstable ones associated with attainment of the extrinsic outcomes.

To summarize, the results of the two studies support the SDT interpretation rather than the expectancy-value and instrumentality interpretations of the intrinsic versus extrinsic goal framing effects, because (a) the double goal framing condition did not yield greater learning and persistence than did the intrinsic goal condition—in fact it yielded less—and (b) the extrinsic goal condition resulted in immediate achievement deficits, and less long-term persistence compared with the no-goal as well as intrinsic-goal conditions. Hence, it seems that intrinsic versus extrinsic goal framing induces a different quality of engagement and motivation with respect to the learning rather than just enhancing the quantity of motivation for learning. On a practical level, these results suggest that instructors may hurt students' adaptive learning and continued interest and persistence for learning when they emphasize its extrinsic goal instrumentalities. Instead, it is clearly better to focus on the intrinsic goals that could result from the learning, and it even appears to be better not to do any goal framing than to do extrinsic goal framing.

The Match Hypothesis

According to SDT, the framing of learning activities in terms of the attainment of intrinsic goals should be advantageous for the learning and well-being of all students because these goal contents are more consistent with students' basic psychological needs. In contrast, the match perspective (e.g., Hidi & Harackiewicz, 2000; Sagiv & Schwartz, 2000) suggests that intrinsic goal framing will promote learning and performance among intrinsic-goal oriented individuals, whereas extrinsic goal framing will yield learning benefits for individuals who have an extrinsic-goal orientation. Hence, the impact of goal framing should not depend so much on the goal itself as on the fit between the presented goal and the learners' goal orientation. As such, the match approach would suggest that the overall enhancement of learning and persistence in the intrinsic goal conditions of the studies reviewed earlier were carried primarily by those learners whose goal orientation was intrinsic.

A few studies shed preliminary light on this issue. They explored whether portraying a learning activity as serving extrinsic goal attainment would have detrimental effects on learning for people whose goal orientation was expected to be primarily extrinsic. Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004; Study 2) examined this in one experiment among business students. These students, whose goal

orientation has been found to be more extrinsic than intrinsic (Duriez et al., 2004; Kasser & Ahuvia, 2002; Vansteenkiste, Duriez, et al., in press), were told that a learning activity about communication principles would be useful to them either to achieve the extrinsic goal of financial success in their work or to attain the intrinsic goal of personal development in their work. Based on the match hypothesis, it would be expected that the negative effects on achievement of extrinsic goal framing found for education students (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Study 1) would not be found for the business students because they place high value on the extrinsic goal of financial success (Vansteenkiste, Duriez, et al., in press). However, the findings showed clearly that extrinsic goal framing was indeed undermining of learning and persistence relative to intrinsic goal framing for these business students just as it had been for education students.

A second indirect test of these issues was examined in two experiments with children with obesity (Vansteenkiste, Simons, et al., 2005; Studies 1 and 2). Previous studies have shown that such children are highly concerned about the extrinsic goal of appearing attractive (Braet, Mervielde, & Vandereycken, 1997). The children with obesity were told that reading a text about nutritional information was useful for attaining either the intrinsic goal of health and physical fitness or the extrinsic goal of physical attractiveness and beauty. On the basis of the match perspective, portraying the reading activity as contributing to the goal of physical attractiveness should promote learning for these children who were assumed to value attractiveness very highly. However, this extrinsic (relative to intrinsic) goal framing hindered rather than promoted their learning, as demonstrated both 1 week and 4 weeks after the experimental induction. These studies, therefore, complemented the study of business school students who were given an extrinsic (versus intrinsic) goal.

Although the studies with business students and children with obesity are consistent with SDT, they provide only indirect evidence, because participants' own value orientations were not directly assessed. Therefore, Timmermans, Vansteenkiste, and Lens (2004) did a study on children's learning of material about working for a charity organization. In the study, they assessed individual differences in the fifth- and sixth-grade children's intrinsic and extrinsic value orientations prior to their placement in either the intrinsic or the extrinsic goal framing condition. Furthermore, 1 week prior to the experiment, children were given a questionnaire that listed various prosocial activities (including, working for a charity organization). For each activity, children needed to indicate why they would value participating in it. An intrinsic and an extrinsic goal option were given, and participants chose one. Of interest, for the activity of working for a charity organization, about half the children focused on the intrinsic goal (i.e., community contribution) and half on the extrinsic goal (i.e., social popularity).

One week later, during the actual experiment, participants were told that learning about the prosocial activity would serve either an intrinsic goal or an extrinsic goal. Hence, the experimentally manipulated goal either matched or did not match (a) the participants own value orientations and (b) their intrinsic or extrinsic valuing of the activity as assessed 1 week before. Consistent with SDT, intrinsic goal framing promoted achievement and persistence compared with extrinsic goal framing as a main effect, and it did not interact with either value orientations or personal valuing of the activity. This lack of interaction suggests that the main effect for goal framing occurred (a) for both intrinsically and extrinsically oriented individuals and (b) for individuals who perceived the task as serving either an intrinsic goal or an extrinsic goal. Future empirical work could usefully examine the robustness and generalizability of these findings to other manipulated goal contents and to other age groups (e.g., late adolescents). Further, because the content of the learning material (i.e., supporting a charity organization on tuberculosis) in the Timmermans et al. (2004) research was more consistent with an intrinsic goal orientation, it would be instructive to examine whether the match hypothesis would be confirmed when the learning material is more consistent with an extrinsic goal focus. Finally, future research might also examine whether an extrinsic–extrinsic match would produce more beneficial learning effects if students had fully internalized the importance of extrinsic goal contents compared with when these extrinsic goal were only pursued for poorly internalized, controlled reasons.

In short, the studies herein reviewed provide initial evidence for SDT's point that promoting extrinsic goals yields considerable learning costs regardless of whether the individuals are extrinsically or extrinsically oriented. Further studies are needed to examine whether goal framing interacts with individual differences other than people's person goal orientations.

In sum, the findings from the set of goal framing studies fit well with SDT's contention that different types of goal framing have different implications (R. M. Ryan et al., 1996), with some types (viz., extrinsic goals) being associated with poorer learning, presumably because they are less likely to satisfy people's basic psychological needs.

FROM THEORY TO PRACTICE

A number of researchers (e.g., Assor, Kaplan, & Roth, 2002; Cordova & Lepper, 1996; Deci et al., 1994; Husman & Lens, 1999) have suggested that, in order to enhance students' motivation for learning, it is useful for practitioners to point out the relevance of the learning material, especially in cases in which students have low spontaneous interest in the material. In other words, to the extent that students are not interested in particular activities or subjects, knowing the meaning or relevance of the activity for themselves can be a source of motivation.

The research on intrinsic versus extrinsic goal framing suggests, however, that when instructors provide students with a rationale for a learning activity that will help the students understand the value of the learning for themselves, it is important that the instructors focus on intrinsic rather than extrinsic goals. In other words, if instructors help students see the long-term relevance to themselves in terms of intrinsic goals such as personal growth, meaningful relationships with others, becoming more healthy and fit, or contributing to their community, for example, the students are likely to become more engaged with the learning activities and in turn to understand the material more fully and to perform better in demonstrating their competence. If, instead, teachers provide an extrinsic-goal rationale for the learning, memorization of study material might be enhanced, but this rote learning is likely to be short-term and it tends to be accomplished at the cost of poor conceptual understanding and less interest in and persistence at related activities. It is also interesting to note that the research indicates that teachers do not need to shape the type of goals they provide to the students' personal goal orientations. It appears that all students, regardless of whether they attach higher importance to extrinsic goals or to intrinsic goals, benefit from having teachers explain the intrinsic goal utility of the learning activities.

Furthermore, the goal framing research indicates that teachers would do well to adopt an autonomy-supportive rather than controlling style in relating to the students. Considerable previous research had confirmed the importance of understanding the students' perspective, encouraging them to solve the problems they encounter, supporting their self-initiation and experimentation, and providing as much choice as possible about what to do and how to do it (e.g., Deci, Schwartz, Sheinman, & Ryan, 1981). The recent research on goal framing makes the important additional point that when teachers are autonomy supportive, for example, in ways just specified, their promotion of long-term intrinsic learning goals will have more positive effects on the students' motivation, learning, and achievement than if the teachers attempt to promote intrinsic goals in a controlling way. If students feel pressured to engage in the learning, either because instructors rely on externally controlling contingencies (e.g., rewards, deadlines, or controlling language) or internally controlling tactics (e.g., guilt induction, love withdrawal, or shaming procedures), the students' enjoyment of the learning, their conceptual integration of it, and their persistence at the learning activities are likely to be forestalled.

Notably, all of the SDT studies of goal framing discussed in this overview were conducted in real-life educational settings. This helps make clear that teachers can in fact implement the use of intrinsic goal framing and autonomy-supportive practices in their daily teaching. Of course, we recognize that not all types of learning material can be linked to intrinsic goal contents, and we emphasize that, in order for the intrinsic goal framing to yield learning benefits, the intrinsic goals have to be perceived as meaningful and realistic by the individual students. Hence, the implementation of these intrinsic goal practices will require the teachers to use creativity in formulating the goals and the ways they are introduced. Their implementation, in other words, will need to be varied, to be believable, and to seem relevant to the students. However, the current experimental research is hopeful in that it shows that even a very brief mention of the relation of learning tasks to intrinsic goal tends to be beneficial to the students' learning. As well, relatively small changes in being more autonomy supportive (e.g., 'You may try to do your best') rather than controlling (e.g., 'You should try to do you best) also appear to have a relatively profound effect on students' learning, performance, and persistence.

CONCLUSION

Most of the work within SDT (Deci & Ryan, 2000) has focused on the autonomous versus controlled regulations of behavior and on the autonomy-supportive versus controlling social contexts that have been found to prompt these types of regulations. This research has been done in laboratory settings and in various life domains including parenting, health care, work organizations, and sport. As well, a considerably amount of the research has been done in educational settings ranging from elementary schools to medical schools. That body of research has proven useful in predicting a variety of motivational and outcome variables across these various settings, and they have also been reliable in predicting students' investment in learning activities, persistence, and level of achievement (Reeve, Deci, & Ryan, 2004).

In addition to the conceptualization of the autonomous versus controlled motives for doing learning-related activities, SDT researchers (Kasser & Ryan, 1996) have gradually paid greater attention to the goal contents on which students focus. Individuals are said to have a natural tendency to focus on intrinsic and growth-oriented rather than extrinsic and outward-oriented goals, because the intrinsic goals are theorized to be more directly linked to satisfaction of the basic psychological needs for competence, relatedness, and autonomy.

The distinction between intrinsic and extrinsic goals was used initially to predict psychological health and well-being, but most recently it has been related to learning, achievement, and persistence at learning activities. In a series of experimental studies, it was found that portraying activities as serving the attainment of an intrinsic rather than an extrinsic goal promotes deeper processing of the learning material, greater conceptual understanding of it, and both short-term and long-term persistence at relevant learning tasks. These effects were found to occur because intrinsic goal framing induces a different quality of motivation (i.e., it promotes a task orientation). These findings were obtained across diverse age groups, diverse intrinsic and extrinsic goal contents, and diverse types of learning activities. They were also found to apply to individuals whether the individuals were intrinsically

or extrinsically oriented in terms of their personal goals. Extrinsic goal framing yielded some positive effects; namely, it promoted as much rote learning as did intrinsic goal framing, and it resulted in somewhat higher persistence over the short term than did a no-goal condition. However, the advantage in terms of short-term persistence was at substantial cost in terms of the enjoyment and valuation of the persistence, the longer term persistence, and conceptual understanding of the learning material.

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