Less Is Sometimes More: Goal Content Matters

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According to expectancy-value theories, increasing the utility value of a learning activity should result in higher motivation and better learning. In contrast, self-determination theory posits that the content of the future goals (intrinsic vs. extrinsic) that enhance the utility value of the learning activity needs to be considered as well. Contrast-cell analyses of an experimental study showed that double goal framing (intrinsic plus extrinsic) facilitated a mastery orientation, performance, and persistence and decreased a performance-approach orientation compared with extrinsic goal framing. However, double goal framing resulted in a less optimal pattern of outcomes compared with intrinsic goal framing, suggesting that the content of the provided goals matters. Goal content effects on both performance and persistence were fully mediated by mastery orientation.

Teachers are often confronted with students who seem to be disengaged from their study material and who might even appear apathetic toward schooling. These students do not experience any inherent interest in their schoolwork and are thus not intrinsically motivated (Anderman & Maehr, 1994). Despite the lack of spontaneous interest, teachers might try to enhance students' motivation, performance, and persistence with study-related activities by pointing out the relevance of the study material to achieve a future goal (Assor, Kaplan, & Roth, 2002; Lens, Simons, & Dewitte, 2002; Simons, Dewitte, & Lens, 2000). In other words, they might try to promote optimal learning by increasing the utility value of the present activity (Eccles & Wigfield, 2002).

However, there might be substantial differences in the content of the future goals or goals that teachers try to promote to enhance the usefulness of the present task. Some teachers indicate that actively participating in present school activities helps a student exercise skills and talents that will be needed in future education and career. Other instructors emphasize that mastering the study material leads to a more prestigious professional life and to financial success. Still other teachers indicate that doing one's best might be useful in attaining both types of future goals.

In short, engaging in a study task can be perceived as more or less useful or instrumental, depending on the number of goals that the present task engagement serves. However, the *content* or *nature* of these anticipated future goals can differ considerably as well. As discussed later in this article, according to self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2000), one way to describe these future goals is to characterize them as either intrinsic or extrinsic in nature. The aim of the present research, then, is to examine whether increasing the perceived usefulness or utility value of the present task (Eccles et al., 1983; Eccles & Wigfield, 2002) per se is a sufficient condition to promote optimal study motivation or whether the content of the future goal also matters in understanding why some students are better motivated, perform well, and persist afterwards with study-related activities (Kasser & Ryan, 1996; Simons, Vansteenkiste, Lens, & Lacante, 2004). Both elements are discussed in more detail below.

Utility Value

Within expectancy-value theories (DeBacker & Nelson, 1999; Eccles, 1984; Eccles et al., 1983), *utility value* is considered as one component of task value along with attainment value, intrinsic value, and costs. Utility value refers to the perceived instrumentality or the degree of perceived usefulness of the present task to attain present and future goals. Utility value thus is determined by "how well a task relates to current and future goals" (Eccles & Wigfield, 2002, p. 120). A task can have positive value to a person because it facilitates the attainment of important future goals even when the individual is not interested in the activity for its own sake and does not experience intrinsic satisfaction in doing the task (Ryan & Deci, 2000). As pointed out by Eccles and Wigfield (2002), utility value captures more of the extrinsic motivation for engaging in a task. Further, the concept is identical to the notion of perceived instrumentality of current behavior (Husman, Derryberry, Crowson, & Lomax, in press; Husman & Lens, 1999; Miller, DeBacker, & Greene, 1999; Raynor, 1981).

In a number of previous studies, a composite value measure, with utility value as one of its facets, was used as a predictor of effort-expenditure, persistence, performance, and goal orientations. These studies have shown that task value predicts both the intention and the actual decision to take mathematics, to engage in sports, and to continue taking science courses (Eccles et al., 1983; Meece, Wigfield, & Eccles, 1990; Sullins, Hernandez, Fuller, & Tashiro, 1995; Wigfield & Eccles, 1992). In addition, it predicts academic achievement (Eccles & Wigfield, 2002).

More recently, expectancy-value theorists have related students' values to their goal orientations, which are considered of crucial

importance within goal theory (Elliot & Church, 1997; Harack-iewicz, Barron, & Elliot, 1998; Middleton & Midgley, 1997; Pintrich, 2000). For instance, Wigfield, Anderman, and Eccles (2000) found that children's overall task values are significantly related to adopting a mastery orientation (i.e., trying to master the task) and to holding a performance-approach orientation (i.e., maximizing favorable evaluations of one's competence compared with others). Similarly, DeBacker and Nelson (1999) reported that task importance, with utility value as one of its facets, was positively correlated with mastery orientation among both male and female participants but was only positively related to performance-approach orientation among female participants. Bong (2001) found positive correlations between task value and both mastery orientation and performance-approach orientation across different courses. In addition, task value appeared to be positively correlated to performance-avoidance orientation (i.e., minimizing negative evaluations of one's competence compared with others). In short, this pattern of correlations seems to suggest that task value, as an overall omnibus measure of the strength or quantity of motivation, is positively related to all three goal orientations, which reflect students' purposes for behaving in a competence-relevant situation (Barron & Harackiewicz, 2001; Midgley, Kaplan, & Middleton, 2001). Thus, the more useful or valuable students perceive their studying, the more they are motivated to do well for any kind of reason in an achievement situation.

All previous studies were correlational in nature. However, in a recent experimental study, Simons, Dewitte, and Lens (2003) found that enhancing the utility value of an activity by indicating its instrumentality for attaining the future goal of self-development enhances participants' mastery orientation, effort expenditure, and performance.

The present study builds on this work by examining whether increasing the utility value of a school activity by stating that it serves the attainment of two future goals would result in more optimal study outcomes than when reference was made to only one of these two future goals (with everything else assumed to be constant). In essence, this hypothesis is based on a quantitative approach of motivation, as held within expectancy-value models (Eccles & Wigfield, 2002; Feather, 1990, 1992; Vroom, 1964), which suggests that "more should be better." Perceiving present task engagement as more useful, instrumental, or valuable should increase the strength of motivation and lead to better learning outcomes.

However, a conflicting hypothesis that holds that "more is not always better" can be derived from self-determination theory. This theory claims that the content of the future goals (intrinsic vs. extrinsic), which grants utility value to the present task is an important predictor of students' motivation and thriving. To clarify this point, we consider the differentiation between intrinsic and extrinsic goals of self-determination theory in more detail.

Intrinsic Versus Extrinsic Goals

Self-determination theory claims that it is not only the number or quantity of goals that matters but also their quality. It is argued that people pursue qualitatively different types of goals, which will lead to considerably different outcomes (Deci & Ryan, 2000). Intrinsic goals such as community feelings, affiliation, health, and self-development are distinguished from extrinsic goals such as

image, financial success, and appearing physically attractive (Kasser & Ryan, 1993, 1996, 2001).[1] In line with an organismic way of thinking, intrinsic goals are theorized to promote psychological well-being because intrinsically oriented individuals are more likely to satisfy their basic psychological needs along the path toward goal attainment (Deci & Ryan, 2000). In contrast, extrinsic goals often entail the contingent reactions of others and are associated with more stressful interpersonal comparisons. They reduce opportunities to engage in basic psychological need-satisfying experiences, which in turn leads to less subjective well-being. Past research has convincingly illustrated the positive well-being correlates of adopting an intrinsic versus extrinsic goal orientation (see Deci & Ryan, 2000; Kasser, 2002, for overviews).

More recently, Vansteenkiste and colleagues (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004) complemented this correlational research by demonstrating, in a set of experimental studies, that framing a learning activity in terms of a future intrinsic versus extrinsic goal attainment results in considerably different outcomes. Students involved in the intrinsic goal-framing condition processed the reading material more deeply, achieved higher grades, and persisted more intensively afterwards than those involved in the extrinsic goal-framing condition. The authors explained these findings by stating that intrinsic goals are more likely to elicit a stronger mastery-oriented engagement toward the learning activity, resulting in more adaptive study behavior. Unfortunately, the hypothesized mediating role of mastery orientation in the goal-content effect has not been examined yet and therefore constituted an important aim of the present research.

However, a different explanation for this goal-content effect could be provided on the basis of the notion of utility value (Eccles et al., 1983). It could be argued that future intrinsic goal framing leads to better outcomes because intrinsic goals would be more strongly valued than extrinsic goals and therefore grant more utility value to the present task. Thus, instead of using qualitative reasoning to explain the results by referring to the content of the provided goals, as is the case within self-determination theory, a rather quantitative interpretation could also account for these findings.

Initial attempts to clarify these issues are represented in previous research. More specifically, there is some experimental evidence that seems to plead against such an alternative quantitative explanation. First, Vansteenkiste, Simons, Lens, et al. (2004) found that people involved in the future extrinsic goal condition perceived their current task engagement as equally and in some cases even more important than participants involved in the future intrinsic goal condition. In a second study by Vansteenkiste, Simons, Soenens, and Lens (2004), it was found that, in comparison with a control condition without a future goal, future extrinsic goal fram-

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[1] It should be noted that the distinction between intrinsic vs. extrinsic *goal contents* is conceptually different from the notions of intrinsic vs. extrinsic *motivation* (Deci & Ryan, 2000). While the former pertains to the type of goals people might focus on during their goal pursuits (the "what" of goal pursuit), the latter refers to the motives or reasons that are underlying people's goal pursuit (the "why" of goal pursuit). As such, people can be intrinsically or extrinsically motivated to reach intrinsic or extrinsic goals, and both have been found to independently predict well-being (Sheldon, Ryan, Deci, & Kasser, 2004).

ing undermined participants' effort–expenditure, persistence, and performance. Thus, even though people in the future extrinsic goal condition probably perceived their task engagement as more useful and important than those in the control group, they nevertheless displayed a less optimal pattern of functioning.

The goal of the present research is to shed further light on these motivational issues because of their importance for the field of motivational and educational psychology, which seems to be characterized by a number of theories that primarily define motivation in terms of intensity, level or amounts, and theories that also conceptualize motivation in terms of types or qualities (Vansteenkiste, Lens, De Witte, & Feather, in press). Specifically, we aimed to explore whether enhancing the perceived usefulness of the learning activity (i.e., quantity of motivation) would in all cases lead to more optimal motivation and study outcomes or whether it is also necessary to take into account the type of goals (i.e., quality of motivation) that increase the perceived utility value.

The Present Study

In comparison with previous goal-content studies, this study examined the impact of goal content on a new set of dependent variables, namely, students' levels of experienced stress during their task engagement as well as their goal orientations. As in previous studies, students' test performance and persistence behavior were also included as outcome variables. Two sets of conflicting hypotheses were formulated on the basis of the previously mentioned theoretical frameworks.

On the basis of Eccles and Wigfield's (2002) theorizing, we hypothesized that students would function more optimally and perform better when they perceived their task engagement as leading to two future goals (an intrinsic and an extrinsic goal) rather than to only one of them. Because a double-goal-framing condition adds importance and utility value to students' task engagement, it should result in stronger motivation and, as a consequence, more persistence and higher achievement compared with single future intrinsic goal framing (Hypothesis 1a) and single future extrinsic goal framing (Hypothesis 2a). On the basis of previous research (Bong, 2001; Wigfield, Anderman, & Eccles, 2000), it was also expected that enhancing the utility value of the task would increase participants' mastery orientation as well as their performance-approach and performance-avoidance orientation. Presumably, enhancing the overall perceived usefulness of the activity should lead to an increase in overall motivation, regardless of the reason for being more motivated.

However, according to self-determination theory, the quality or the type of goals rather than the number of goals matters. Therefore, we predicted that the most optimal pattern of results would occur in the single future intrinsic goal condition, followed by the double future goal condition (intrinsic plus extrinsic) and the single future extrinsic goal condition. Specifically, we expected that because of the competitive and evaluative nature of extrinsic goals (Kasser & Ryan, 1996), extrinsic goal framing would enhance people's concern about how they perform in comparison with others, leading them to become performance-approach and performance-avoidance oriented and to feel more stressed and anxious during their task engagement. In addition, because extrinsic goals are likely to induce an outward orientation (Williams, Cox, Hedberg, & Deci, 2000), they would be expected to distract people from the task at hand and would thus interfere with students' attempts to focus on understanding and mastering the study material. Because of this reduced mastery-oriented engagement in the reading material, adding an extrinsic goal to an already present intrinsic goal is likely to forestall people's performance and persistence at task-related activities relative to framing the learning activity only in terms of a future intrinsic goal instrumentality (Hypothesis 1b). Thus, on the basis of self-determination theory (Ryan, 1982), we predicted that mastery orientation would mediate the effect of double goal framing relative to future intrinsic goal framing on optimal learning (Hypothesis 3).

By contrast, we predicted that indicating the usefulness of the task to attain an intrinsic goal next to an already present extrinsic goal would counterbalance the negative effects associated with extrinsic goal instrumentality. It is expected to lessen individuals' feelings of experienced stress, leading them to become more focused on fully grasping the content of the reading material rather than being concerned about outperforming or doing worse than others. Finally, because adding an intrinsic goal to an already present extrinsic goal would lead students to become more focused on mastering the task, they would be expected to perform better afterwards and persist longer at free-choice activities compared with those involved in the future extrinsic goal condition (Hypothesis 2b). Thus, we also expected the effect of double goal framing relative to future extrinsic goal framing to be mediated by mastery orientation (Hypotheses 3).

Hypotheses 1 and 2 were analyzed with contrasts and are shown in Table 1. First, we contrasted the future intrinsic goal condition with the double (i.e., intrinsic and extrinsic) goal condition (Contrast 1). Second, we contrasted the future extrinsic goal condition with the double goal condition (Contrast 2).

However, prior to testing these hypotheses in our primary study, we conducted a pilot study to ascertain whether providing both types of goals would indeed lead participants to perceive their current task engagement as more useful or instrumental than providing only one of those future goals. The same contrast analyses were performed as in the primary study (see Table 1).

Table 1
Overview of Contrast Analyses

Contrast	Future intrinsic goal condition	Double goal condition	Future extrinsic goal condition
1. Future intrinsic goal vs. double goal	1	−1	0
2. Future extrinsic goal vs. double goal	0	1	−1

Pilot Study

Method

Participants and Procedure

Twenty-four male and 112 female undergraduate students ($N = 136$) majoring in psychology at the University of Leuven participated in the experiment. Participants were randomly assigned to one of the three experimental conditions (cell Ns varied between 44 and 47). Participants were asked to imagine that they would participate in a recycling training. They would read a text on recycling, which was preceded by a description of the recycling training, outlining its purpose. Participants then read one of the three sets of instructions that would be used in the actual study, and filled out a short six-item questionnaire, assessing to what extent they perceived their task engagement as being useful to attain the intrinsic goal of community contribution or the extrinsic goal of monetary benefit. These represented the two goals that were manipulated in the primary study.

Measures

Intrinsic and extrinsic goal importance. Participants indicated how much they would value their participation in the recycling training to attain the intrinsic goal of community contribution (e.g., "I would find it important to engage in a recycling training, because such a training teaches me how I can help to improve the world") or to attain the extrinsic goal of monetary benefit (e.g., "I would find it important to engage in a recycling training, because such a training teaches me how I can be financially successful in my life"). Participants indicated their agreement with these items by encircling a number on a scale varying from 1 (*completely disagree*) to 5 (*completely agree*). Three filler items—tapping the extrinsic goal of image/fame—were mixed among these six items. Subsequently, a principal-components analysis with promax rotation allowing factors to be intercorrelated was performed on these six items. Two easily interpretable factors emerged, reflecting the perceived intrinsic and perceived extrinsic goal importance and utility of the activity. Internal consistencies of both subscales were adequate (.85 and .83, respectively). Finally, a composite score of overall perceived utility value was computed by averaging the importance placed on the intrinsic and extrinsic goals.

Results

First, we conducted a multivariate analysis of variance (MANOVA) with all of the dependent variables included to explore whether the three types of future goal conditions differed significantly from each other across the dependent variables. The overall F value for Pillai's procedure was statistically significant, $F(4, 266) = 8.83$, $p < .01$. Subsequently, one-way analyses of variance (ANOVAs) were performed for each of the dependent variables and are reported in Table 2. The three conditions differed on all outcomes, except for intrinsic goal importance. We then performed the a priori formulated contrasts. Means and standard deviations of the outcome measures for the three conditions are reported in Table 2.

Participants in the future intrinsic goal condition experienced their task participation as less useful for attaining the extrinsic goal of monetary benefit compared with the participants involved in the future double goal condition, $t(133) = -4.83$, $p < .01$. The future extrinsic and future double goal conditions did not differ from each other on this outcome. Participants in all three conditions experienced their task engagement as equally useful for attaining the intrinsic goal of community contribution. This shows that participants perceived the recycling program to be important for reaching the future intrinsic goal of community contribution, regardless of whether their attention was drawn to that future goal. Most important, across goal contents, participants in the future double goal condition experienced their task participation as more useful than those in the future intrinsic goal condition, $t(133) = -3.73$, $p < .01$, and as equally useful as those in the future extrinsic goal condition, $t(133) = 0.79$, $p = .39$.

Brief Discussion

The primary goal of the pilot study was to examine whether framing a learning activity in terms of both an intrinsic and an extrinsic goal attainment would lead participants to more strongly value their task participation than when only one of both goals was provided. The double goal framing enhanced the perceived utility of the learning activity compared with the intrinsic goal group, but, unexpectedly, did not enhance perceived utility in comparison with the extrinsic goal group. However, the most crucial hypothesis concerns the comparison of the double goal condition with the future intrinsic goal condition, because expectancy-value theories (e.g., Eccles & Wigfield, 2002) and self-determination theory (Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004) generate different hypotheses regarding

Table 2

Means and Standard Deviations for the Three Future Goal Conditions: Pilot Study

Variable	Future intrinsic goal condition ($n = 47$)	Double goal condition ($n = 45$)	Future extrinsic goal condition ($n = 44$)	F
Intrinsic goal importance				
M	4.31$_a$	4.28$_a$	4.26$_a$	0.07
SD	0.61	0.69	0.51	
Extrinsic goal importance				
M	1.31$_a$	2.08$_b$	2.27$_b$	20.34**
SD	0.49	0.80	0.96	
Total task importance				
M	2.81$_a$	3.18$_b$	3.26$_b$	11.63**
SD	0.40	0.51	0.54	

Note. Within rows, means with the same letter are not significantly different.
** $p < .01$.

the motivational consequences of these different goal framings. Specifically, on the basis of the results of the pilot study and on expectancy-value theory, we expected future intrinsic goal framing to produce lower motivation and less optimal educational outcomes than the double goal condition, whereas self-determination theory would predict future intrinsic framing to produce the most optimal pattern of motivation and educational outcomes.

Primary Study

Method

Participants and Procedure

Participants were 245 19- to 20-yearold female 1st-year students enrolled at a Belgian teacher training college to become preschool teachers. The study took place during the students' regular classes, which consisted of groups of 30 to 40 students. The regular teacher gave the students written instructions (in Dutch), which contained the experimental manipulations. The three types of goal content instructions were randomly distributed in each group (cell sizes ranged from 45 to 101).[2] Students did not know that they received different instructions. After having read the instructions, the students were given 30 min to study a text (4 pages long) about recycling, a text that was part of their regular required class reading. This learning activity was part of a campus-wide initiative on recycling that was underway at the time the study took place.

Instructions for participants in the future intrinsic goal condition stated that "reading the text will provide you some information about how to teach your future toddlers some simple ecological strategies so that they can learn to contribute themselves to a clean and healthy environment." This was intended to represent the future intrinsic goal of contributing to the community (Kasser & Ryan, 1993). Participants in the future extrinsic goal condition were told that "reading the text will provide you some information about how to save money on your future job by recycling materials." This was intended to represent the future extrinsic goal of attaining monetary benefits (Kasser & Ryan, 1993). Finally, participants in the double goal condition were told that their current task engagement served both types of future goals.

After studying the text, participants completed a series of questionnaires that assessed (a) their degree of experienced stress when engaging in the activity and (b) their goal orientations. Next, they were tested for their conceptual understanding of the text material as was announced before reading the study material. Subsequently, participants were told that the school library had additional material about recycling set apart so they could acquire more information about this issue if they wanted to and also that they could visit a recycling plant if they wanted to learn more about how recycling is done. Finally, a week later, participants were placed in randomly formed groups of 6, in which they were required to present to all classmates an educational game about recycling opportunities for toddlers. All students were graded individually by their teacher regarding the quality of their personal contribution to the group presentation.

Measures

Experienced stress. Two items which were taken from the Intrinsic Motivation Inventory (Ryan, 1982) assessed the degree to which participants felt stressed, anxious, and nervous when reading the study material. Participants indicated on a 5-point Likert scale their degree of agreement with each of the items on a scale varying from 1 (*completely disagree*) to 5 (*completely agree*). The correlation between the two items was .78.

Goal orientations. A questionnaire assessing students' mastery and performance orientations was administered. Some items were adapted from existing questionnaires (Patterns of Adaptive Learning Survey; Midgley et al., 1997; Motivated Strategies for Learning Questionnaire; Pintrich,

Smith, Garcia, & McKeachie, 1991), whereas others were created for the present study, taking the content of the text into account. All items were adapted to the specific situation by changing the stem from "studying this course" to "reading this text" and were rated on a scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Because an exploratory factor analysis conducted with promax rotation revealed the predicted three-factor structure, the three subscales were constructed by averaging the items. Cronbach's alpha was .93 for performance-avoidance orientation (five items; e.g., "I am concerned about what others will think of me if I make mistakes on the test about this text"), .96 for performance-approach orientation (four items; e.g., "I feel good about myself when I perform better than others on the test about this text"), and .97 for mastery orientation (five items; e.g., "Fully understanding the content of this text is the most important thing for me") after omitting one original item out of the latter scale, which considerably reduced the internal consistency.

Test performance. Participants' performance on the written test of comprehension and their contribution to the collective presentation were graded by their instructor on a scale varying from 1 (*very bad*) to 10 (*very good*). The questions focused on conceptual rather than rote learning of the material. The teacher was unaware of the participants' condition and was unfamiliar with the theoretical purpose of the study. Scores were averaged to form a single index of achievement. The correlation between the two scores was .92.

Free-choice persistence. Two options were offered to participants for learning more about recycling, namely, going to the library to obtain additional information about recycling and visiting a firm that recycles. A record concerning who visited the recycling plant was kept by the regular teacher of the class, and participants' visit of the library was automatically registered because students needed to swipe their student cards when entering the library. Because the students had identified their names on the instruction sets during the experiment, it was possible to track which participants engaged in the additional activities and which did not take part in them. For each participant, a count was made of the number of free-choice opportunities they took advantage of (ranging from 0 to 2).

Results

Preliminary Analyses

Table 3 shows the intercorrelations between the six dependent variables. Being mastery oriented was negatively related to being performance-approach oriented, unrelated to adopting a performance-avoidance orientation, and positively related to both performance and persistence. In contrast, both types of performance orientation negatively predicted performance, and performance-approach orientation also negatively predicted persistence. Performance and persistence were positively correlated.

Next, we conducted a MANOVA with all of the dependent variables (perceived stress, goal orientations, performance, and persistence) included to explore whether the three types of future goal conditions differed significantly from each other across the dependent variables. The overall F value for the Pillai's procedure was significant, $F(12, 476) = 8.96$, $p < .01$. Subsequently, we performed one-way ANOVAs for each of the dependent variables. Except for the performance-avoidance orientation, they all were significant (See Table 4), which allowed us to test the a priori formulated contrasts. Means and standard deviations of the outcome measures for the three conditions are reported in Table 4.

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[2] The cell sizes are rather unequal due to a mistake during the distribution of the instructions.

Table 3
*Correlations Between Mediating and Dependent Variables
(Primary Study)*

Variable	1	2	3	4	5	6
1. Experienced stress	—					
2. Mastery orientation	−.63**	—				
3. Performance-approach orientation	.30**	−.69**	—			
4. Performance-avoidance orientation	−.02	−.07	.02	—		
5. Performance	−.49**	.41**	−.33**	−.18**	—	
6. Persistence	−.44**	.36**	−.27**	−.08	.71**	—

$* p < .05.$ $** p < .01.$

Primary Analyses

To test the conflicting hypotheses derived from expectancy-value theories and self-determination theory each of the single future goal conditions was compared with the double future goal condition through contrast analyses (See Table 2).

Contrast 1: Double goal framing versus single future intrinsic goal. Contrast-cell analyses indicated that participants in the future intrinsic goal condition experienced their task participation as less stressful, $t(243) = -2.40, p < .05$, became more mastery oriented, $t(243) = 4.15, p < .01$, were less performance-approach oriented, $t(243) = -4.41, p < .01$, and obtained higher achievement scores, $t(243) = 2.51, p < .05$, compared with participants in the double goal condition. There was no difference between groups in terms of performance-avoidance orientation, $t(243) = -0.84, p < .40$.

Finally, the number of free-choice activities (varying from 0 to 2) participants took advantage of in each condition is reported in Table 5. More participants in the future intrinsic goal condition (73%) took advantage of any or both free-choice activities than did participants (62%) in the double goal condition. To test this sta-

tistically, we performed a chi-square test. However, prior to doing this analysis, the cells that contained the number of participants that engaged in one or two activities needed to be combined to form an overall activity cell because of the low number of participants engaging in only one of the two activities. The final chi-square statistic indicated that the two conditions did not differ from each other, $\chi^2(2, N = 144) = 1.61$, *ns*, although the differences in percentages of participation were in the expected direction.

Contrast 2: Double goal framing versus single future extrinsic goal. Next, the double goal framing condition was compared with the single future extrinsic goal condition. Providing both types of future goals lessened people's feelings of stress in comparison with future extrinsic goal framing, $t(243) = -2.09, p < .05$. It increased participants' mastery orientation, $t(243) = 3.73, p < .01$, decreased their performance-approach orientation, $t(243) = -2.78, p < .01$, and led to better test performance, $t(243) = 2.29, p < .05$ compared with the single future extrinsic goal group. The two groups did not differ from each other in terms of performance-avoidance orientation, $t(243) = 0.39$, *ns*.

Finally, concerning persistence, more participants in the double goal condition (62%) engaged in at least one of the free-choice activities compared with participants in the future extrinsic goal condition (43%). After combining the "1" and "2" activity cells into an overall activity cell, the chi-square statistic for these two conditions was significant, $\chi^2(2, N = 146) = 4.81, p < .05$, indicating that significantly more participants in the double goal condition engaged in one of the two free-choice activities.

Mediational analyses. A final important issue concerned the examination of mastery orientation as a mediator of the future goal-content effects on free-choice persistence and performance. The regression procedure suggested by Judd and Kenny (1981) was used to explore this issue. Mediation can be concluded if a significant effect of the independent variable on the dependent variable decreases in magnitude and becomes nonsignificant when the mediator (mastery orientation) is added to the equation, assuming that the mediator remains a significant predictor of the

Table 4
Means and Standard Deviations for the Three Future Goal Conditions: Primary Study

Variable	Future intrinsic goal condition (n = 99)	Double goal condition (n = 45)	Future extrinsic goal condition (n = 101)	F
Experienced stress				
M	2.66a	3.40b	4.04c	16.30**
SD	1.04	1.93	2.11	
Mastery orientation				
M	3.20a	2.70b	2.26c	50.28**
SD	0.62	0.81	0.65	
Performance-approach orientation				
M	2.28a	2.87b	3.20c	48.60**
SD	0.69	0.77	0.60	
Performance-avoidance orientation				
M	2.12a	2.23a	2.29a	1.28
SD	0.69	0.77	0.76	
Performance				
M	6.58a	6.07b	5.57c	18.15**
SD	5.59	1.13	1.07	

Note. Within rows, means with the same letter are not significantly different.
$** p < .01.$

Table 5
Number (and Percentage) of Participants Engaging in Zero, One, and Two Activities for Each Condition: Primary Study

No. activities	Future intrinsic goal condition (*n* = 99)	Double goal condition (*n* = 45)	Future extrinsic goal condition (*n* = 101)
Zero	27 (27%)	17 (38%)	58 (57%)
One	1 (1.0%)	3 (7%)	3 (3%)
Two	71 (72%)	25 (55%)	40 (40%)

outcome. Mediational results are reported in Table 6. In the top half of the table, the mediational results for the future intrinsic goal versus the double goal condition are reported, and the results of the future extrinsic goal versus the double goal condition are reported in the bottom half.

First, we consider the future intrinsic versus future double goal framing effect. For this contrast, the first requirement of the Judd and Kenny (1981) procedure was satisfied, that is, the independent variable was significantly related to performance and marginally significantly related to persistence. Further, the contrast effect predicted mastery orientation (β = .32, p < .01), and mastery orientation predicted both persistence and performance after controlling for the effect of future intrinsic versus future double goal framing. Thus, the second and third requirements for mediation were also met, namely, the independent variable predicted the mediator and the mediator predicted the dependent variable when the independent variable was controlled for. Finally, the significant effect of this contrast on both performance and persistence became nonsignificant after entering mastery orientation in the equation. Figure 1 graphically displays the mediational role of mastery orientation in explaining the effect on achievement.

Second, consider the effect of future extrinsic versus double goal framing. The contrast significantly predicted both performance and persistence, indicating that the first requirement for mediation was met. The contrast significantly predicted mastery orientation (β = −.28, p < .01), and mastery orientation was a significant positive predictor of both outcomes after future extrinsic versus future double goal framing was entered. These results suggest that the second and third requirement for mediation were

also met. Finally, and most importantly, the direct significant contrast effect on both performance and persistence became nonsignificant after mastery orientation was entered, suggesting that mastery orientation plays a mediating role in explaining the future extrinsic versus double goal condition effect.

Discussion

Several theorists (Miller, DeBacker, & Greene, 1999; Eccles & Wigfield, 2002; Lens, Simons, & Dewitte, 2002) have posited and empirically demonstrated that the degree of perceived instrumentality or the utility value of students' present task engagement plays an important role in predicting their academic functioning. Their reasoning is largely based on a quantitative approach of motivation, holding that the more future goals one expects to reach by engaging in an activity, the more one will be motivated and the better one will function. Accordingly, we reasoned that the learning process should be facilitated if participants were told that the present learning task serves the attainment of two future goals rather than only one of those two future goals.

However, from the perspective of self-determination theory (Deci & Ryan, 2000; Kasser & Ryan, 1996; Ryan & Deci, 2000), it is also important to take into account the content of the future goal that increases the utility value of the task. Within self-determination theory, intrinsic goals (e.g., growth, community contribution, affiliation) are differentiated from extrinsic goals (e.g., financial success, image, physical appearance). Past research revealed that people who are primarily oriented toward the attainment of extrinsic goals are more likely to display lower well-being (Kasser & Ryan, 1993, 1996) and that contexts that frame activities in terms of extrinsic rather than intrinsic goal instrumentalities forestall the learning process (Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004). The present study extended this research by examining how framing students' learning in terms of a single future intrinsic or a single future extrinsic goal stands in relation to emphasizing that the present activity is relevant to attaining both types of future goals.

The results of the present study are in favor of self-determination theory by showing that the quality of the goals that teachers try to promote matters. Specifically, framing a learning activity in terms of an intrinsic plus an extrinsic goal reduces stress

Table 6
Betas for the Paths in the Mediational Analyses With Regression for the Independent Variables of Type of Goal Framing: Primary Study

Variable	Step 1	Step 2	Step 3	*R* square
Intrinsic vs. double goal framing				
Test performance	.19*	.31**	.09	.13**
Free-choice persistence	.14†	.27**	.05	.09**
Extrinsic vs. double goal framing				
Test performance	−.20*	.28**	−.12	.11**
Free-choice persistence	−.17*	.27**	−.09	.10**

Note. Step 1 refers to the path from the independent variable to a dependent variable. Step 2 refers to the path from the mediating variable to a dependent variable, controlling for the independent variable. Step 3 refers to the path from the independent variable to a dependent variable, controlling for the mediating variable. *R* square represents the total amount of variance explained in a dependent variable after entering the independent variable and the mediating variable.
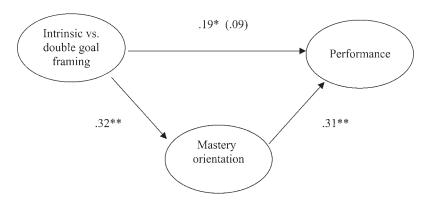† p < .10.   * p < .05.   ** p < .01.

Figure 1. The result for the mediation by mastery orientation in the effect of intrinsic versus double goal framing on achievement.

and promotes a mastery orientation, performance, and persistence compared with only focusing on the attainment of extrinsic goals, as was predicted on the basis of the notion of utility value (Eccles & Wigfield, 2002). An opposite set of findings emerges, however, when the double goal condition is compared with the single intrinsic goal condition. It appears that adding an extrinsic goal to an already present intrinsic goal directs people's attention away from the learning task to external indicators of worth. This shift results in an increased concern about doing better than other students at the task at hand (performance-approach orientation) rather than trying to fully understand the subject of the reading material (mastery orientation). Moreover, participants' performance and persistence are forestalled.

These findings are in line with the results obtained by Vansteen-kiste, Simons, Soenens, and Lens (2004), who showed that extrinsic goal framing resulted in poorer achievement compared with a no-future goal control group. As in the present study, both conditions significantly differed in terms of utility value, but the results also pointed out that in addition to the mere fact that an activity is perceived as useful, it seems to be important to consider what it is useful for.

Further, mediational analyses established mastery orientation as a meaningful mediator of the effects of future intrinsic and future extrinsic goal framing relative to double goal framing on performance and persistence. It appears that extrinsic goal framing functions in a distracting manner, thereby orienting people away from the learning task. When referring to a future extrinsic goal or adding a future extrinsic goal to an already present intrinsic goal, people become less involved in the learning task, which in turn forestalls their performance at a subsequent test and undermines their persistence and interest in the activity. Again, these results suggest that increasing the utility value of a learning task by adding an extra future goal, although perhaps increasing the overall quantity of motivation, leads to a qualitatively different approach of the learning task.

There is one other finding that is worthy of discussion in light of the present debate on the role of performance-approach goals in educational contexts (Elliot & Moller, in press; Midgley et al., 2001; Pintrich, 2000). Specifically, some researchers (Barron & Harackiewicz, 2001) hold that being focused on the attainment of both mastery and performance goals yields positive learning out-comes (i.e., multiple goal perspective), whereas other researchers claim that problems will arise when "proving ability becomes so important to students that it drives out mastery goals" (Dweck, 1999, p. 152; i.e., mastery goal perspective). The present research builds on that work by examining the consequences of social environments (i.e., intrinsic and extrinsic goal framing contexts) that promote a performance-approach orientation at the expense of a mastery orientation (Ames, 1992).

In most survey research, mastery and performance goals are found to be orthogonal (Midgley et al., 2001). However, the present experimental research reveals that a performance-approach orientation and a mastery orientation, which appeared to be distinct orientations in factor analyses, are strongly negatively intercorrelated. In addition, in contrast to past research (Barron & Harackiewicz, 2001; Elliot & Harackiewicz, 1996; Elliot, McGregor, & Gable, 1999), performance-approach goals were negatively related to persistence and performance, which involved deep conceptual understanding of the study material rather than superficial rote learning. As suggested by Midgley et al. (2001), the positive role of adopting a performance-approach orientation might be dependent on the qualitative nature of the outcomes, and future research might explore whether inducing a performance-approach goal orientation by referring to a future extrinsic goal is also harmful for tests that assess a more superficial degree of understanding.

However, we believe that the present results also cast a different light on the current debate within goal theory. At first sight, they suggest, in line with Dweck's (1999) concern, that social contexts, such as extrinsic goal oriented climates, might erode people's mastery orientation as a result of an increase of people's preoccupation with outperforming others. However, we propose a different explanation that requires us to introduce a new interpretation of the multiple goal perspective (Barron & Harackiewicz, 2001). We believe that learners should be primarily focused on mastering the task during the active learning process itself because being focused on demonstrating superior ability when involved in a specific learning task interferes with the attempt to fully process, elaborate, and organize new study material, just as performance-avoidance goals hinder a full absorption of the learning material. In the present experimental situation, it appeared that people who were oriented toward performance-approach goals under the influence of extrinsic goal manipulations became less mastery oriented,

suggesting that both orientations can indeed be conflictual during the learning process itself. [3]

To summarize, we suggest that the (mal)adaptive role of performance-approach goals would depend on the stage of the study process to which they are applied. Being performance-approach oriented is maladaptive during the active learning process because it interferes with a full comprehension of the study material, but it might provide learners with the will to continue or repeat their studying once they have fully understood the content of the learning material.

Limitations and Future Research

Although the results of the present study were quite clear, a few limitations are worthy of discussion. First, the present sample consisted of only female participants. Although previous research (Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004) has found that similar goal-content effects apply to male participants, it would be important to examine whether male participants' learning would also be undermined when provided with both an intrinsic and an extrinsic goal rather than a single intrinsic goal.

Second, only one type of intrinsic and extrinsic goal was manipulated. Although similar effects were obtained using different types of intrinsic goals (i.e., health, self-development) and different types of extrinsic goals (i.e., physical appearance; Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004), it remains to be investigated whether promoting the attainment of other types of intrinsic and extrinsic goals would also undermine the learning process as compared with a single intrinsic goal.

Third, it is interesting to notice that the only variable that was not affected by the goal-framing manipulations was students' performance-avoidance orientation. We speculate that this occurred because both the future intrinsic and the future extrinsic goals were formulated in approach rather than avoidance terms. Future experimental research might well explore whether telling students that their task participation is useful for not missing the attainment of an intrinsic or extrinsic goal would affect students' performance-avoidance orientation in a particular task.

Conclusion

A quantitative reasoning in terms of utility value does not provide a parsimonious explanation of the findings obtained in the present study. It seems that enhancing the utility value of the present task by promoting a future goal is not enough. In other words, more is not always better. Moreover, the content of the future goal that is promoted matters, so less is sometimes more. Only contexts that focus on the attainment of future goals that are intrinsic in nature facilitate the learning process, whereas contexts that value the achievement of future extrinsic goals undermine an optimal academic functioning. The present study demonstrates that this effect occurs because both types of goals induce a qualitatively different approach to the learning task.

We believe that this study, taken together with the other studies on goal content (Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004), has important ramifications for value theories (Eccles & Wigfield, 2002; Feather,

1990, 1992). It appears that it is important not only to consider whether people value their task engagement but also the kind of values they are upholding during their activities. Future research might well try to map out the type of goals that students anticipate in their task engagement rather than only assessing the intensity or level of motivation, as measured through the concepts of utility value and task value. This might help further understanding of why some students, despite their high motivation, still fail to obtain good grades and do not voluntarily persist at learning activities.

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[3] In line with this interpretation, we reran the mediational analyses using a mastery minus performance-approach orientation composite score as the mediator. This composite measure appeared to play an identical mediating role in the explanation of both contrast-cell effects upon performance and persistence.

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