UNIVERSITY OF LEUVEN

DEPARTMENT OF PSYCHOLOGY

RESEARCH CENTER FOR
MOTIVATION AND TIME PERSPECTIVE

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Less is sometimes more: Goal-content matters

Number 123, 2003

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LESS IS SOMETIMES MORE:

GOAL-CONTENT MATTERS

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Abstract

According to expectancy-value theories, increasing the utility value of the learning activity by indicating its instrumentality to attain two rather than only one of the provided future goals should result in higher motivation and more optimal learning. In contrast, self-determination theory posits that it is also important to take into account the content of the future goal (intrinsic versus extrinsic) next to the quantity of provided goals. This hypothesis was tested in an experimental study. Contrast-cell analyses showed that framing the learning activity in terms of both an intrinsic and an extrinsic future goal facilitated a mastery orientation, performance and persistence, while it decreased a performance-approach orientation compared to the single future extrinsic goal condition. However, in line with self-determination theory, double goal framing resulted in a less optimal pattern of outcomes compared to the single future intrinsic goal condition, suggesting that the content of the provided goal matters. Both goal-content effects upon performance and persistence were fully mediated by mastery orientation.

Less Is Sometimes More:
Goal-content Matters

Teachers are often confronted with students who seem to be disengaged from their study material and who even appear apathetic towards schooling. These students do not experience any inherent interest in their schoolwork, and are thus not intrinsically motivated (Anderman & Maehr, 1994). In spite of the lack of spontaneous interest, teachers might try to enhance students' motivation, performance and persistence at 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 goal that teachers try to promote in order to enhance the usefulness of the present task. Some teachers indicate that actively participating at school activities in the present helps to exercise skills and talents that one will also need on one's future education and/or job, while other instructors emphasize that mastering the study material leads to a more prestigious professional live and to financial success. Still other teachers indicate that doing your best might be useful to attain both types of future goals rather than one of these 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 one's present task-engagement serves. However, also the content or nature of these anticipated future goals can considerably differ. As will be discussed further on, according to self-determination theory (SDT; 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 goal of the present research is then to examine whether increasing the perceived usefulness or utility value of the present task (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983; Eccles & Wigfield, 2002) per se is a sufficient condition to promote optimal study outcomes, or whether the content of the future goal (Kasser & Ryan, 1996; Simons, Vansteenkiste, & Lens, in press) is the key element in understanding why some students are 'better' motivated, perform well and persist afterwards. 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 next to 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 contain 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 or when the person does not experience intrinsic satisfaction in doing the task (Ryan & Deci, 2000). As pointed out by Eccles and Wigfield (2002), utility value captures more the extrinsic motives for engaging in a task. Further, the concept is identical to the notion of perceived instrumentality of one's current behavior (Husman, Derryberry, Crowson, & Lomax, in press; Husman & Lens, 1999; Miller, DeBacker, & Greene, 1999; Raynor, 1981).

Although different value-components have been distinguished by Eccles and colleagues, most empirical studies combined some of the value-components to form an index of overall value which indicates the importance of the activity to attain both immediate and remote goals (Anderman, Eccles, Yoon, Roeser, Wigfield, & Blumenfeld, 2001; Bong, 2001; DeBacker & Nelson, 1999). This composite value measure was then used as a predictor of effort-expenditure, persistence, performance, and goal-orientations. These studies have shown that task value, which contains utility value as one of its facets, predicts both intentions and their actual decision to keep taking mathematics, to engage in sports and to continue taking science courses (Eccles, et al., 1983; Meece, Wigfield, & Eccles, 1990; Sullin, Hernandez, Fuller, & Tashiro, 1995; Wigfield & Eccles, 1992) as well as 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; Harackiewicz, Barron, & Elliot, 1998; Middleton & Midgley, 1997; Pintrich, 2000). For instance, Wigfield, Anderman, and Eccles (2000) found that children's overall values are significantly related to adopting a mastery orientation (i.e., trying to master all facets of the task) and to holding a performance-approach orientation (i.e., maximizing favorable evaluations of one's competence

compared to others). Similarly, DeBacker and Nelson (1999) reported that importance, which also contained utility value as one of its facets, was positively correlated with mastery orientation among both males and females, but was only positively related to performance-approach orientation among females. Bong (2001) found also 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 competence compared to 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 valuable students perceive their studying, the more they are motivated to do well for any kind of reason in an achievement situation. Given the maladaptive outcomes associated with performance-avoidance goals (Elliot, McGegor, & Gable, 1999), it seems that higher levels of perceived utility might perhaps not always be related to adaptive outcomes.

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

The present study builds on this work by examining whether increasing the utility value of a present school activity by stating that it serves the attainment of two future goals would result in more optimal study outcomes than when only one of these two future goals was referred to. In essence, this hypothesis is rooted in a quantitative approach of motivation, as held within expectancy-value models (Eccles & Wigfield, 2002; Feather, 1990, 1992), thereby claiming that "more is better": perceiving one's present task-engagement as more useful or valuable leads to better outcomes.

However, a conflicting hypothesis can be derived from SDT that holds that "more is not always better". SDT claims that the content of the future goal (intrinsic versus extrinsic) that grants utility value to the present task is an important predictor of students' thriving. To clarify this point, we need to discuss SDT's differentiation between intrinsic and extrinsic goals in more detail.

Intrinsic versus Extrinsic Goals

SDT claims that people might pursue qualitatively different types of (future) 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). In line with an organismic way of thinking, intrinsic goals are theorized to promote well-being, because intrinsically oriented individuals are more likely to satisfy their basic psychological needs for competence, relatedness and autonomy along the way of their goal-pursuit (Deci & Ryan, 2000). In contrast, extrinsic goals often entail the contingent reactions of others, are associated with engaging in stressful interpersonal comparisons, and rather diminish individuals' opportunities to engage in basic psychological need-satisfying experiences, undermining their well-being. Past research has convincingly illustrated the positive well-being associates 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, 2003a; Vansteenkiste, Simons, Soenens, & Lens, 2003b) complemented this correlational research by showing in a set of experimental studies that framing a learning activity in terms of an intrinsic versus extrinsic goal-instrumentality results in considerably different outcomes. Students involved in the intrinsic goal framing condition more deeply processed the reading material, achieved higher grades, and persisted more intensively afterwards than those involved in the extrinsic goal framing condition. These authors explained this finding by stating that intrinsic goals are more likely to elicit a deep and more task-oriented engagement towards the learning activity, resulting in more adaptive study behavior. The mediating role of mastery orientation in the goal-content effect has though not been examined yet and constituted therefore an important aim of the present research.

However, a different explanation could be provided for this goal-content effect 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 grant more utility value to the present task and because intrinsic goals would be more strongly valued than extrinsic goals. Thus, instead of using a qualitative reasoning to explain the results by referring to the content of the provided goals, as is the case within SDT, a rather quantitative interpretation could also account for these findings.

Past research has undertaken a first attempt to clarify these issues. Specifically, there seems to be some experimental evidence that pleads against such an alternative quantitative explanation. First, Vansteenkiste et al. (2003a) showed that people involved in the future extrinsic goal conditions perceived their current task-engagement as equally and in some cases even as more important than participants involved in the future intrinsic goal condition. Second, in a study by Vansteenkiste et al. (2003b), it was found that future extrinsic goal framing undermined participants' effort-expenditure, persistence and performance compared to a no future-goal control group. Thus, even though people in the future extrinsic goal condition are likely to have perceived their task-engagement as more useful and important than those involved 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 issues because of its 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 conceptualize motivation in terms of types or qualities (Vansteenkiste, Lens, & De Witte, 2002).

Present Study

In comparison to previous goal-content studies, this study examined the impact of goal-content on a new set of dependent variables, namely student' 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 previously mentioned theoretical frameworks.

On the basis of Eccles and Wigfield's theorizing, it was hypothesized that students would function more optimally and perform better when they would perceive their task-engagement as leading to two future goals rather than to one single future goal. Because a double goal framing condition adds importance and utility value to students' task-engagement compared to a single-goal framing condition, it should result in an increased mastery orientation, higher achievement and more persistence. Based on previous research (Bong, 2001; Wigfield et al. 2000), it was expected that enhancing the utility value of the task would also increase participants' 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 highly motivated.

However, according to SDT, the quality or the type of goals rather than the number of goals matters. Therefore, it was 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 distract people from the task at hand and would thus interfere with individuals attempts to focus on fully understanding and mastering of the study material. Because of this reduced full task-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 only framing the learning activity in terms of a future intrinsic goal instrumentality. Thus, on the basis of SDT (Ryan, 1982), it was predicted that mastery orientation would mediate the effect of double goal framing relative to future intrinsic goal framing upon optimal learning.

By contrast, it was 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 instrumentalities. It would lessen people's feelings of experienced stress and people would 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 perform better afterwards and persist longer at free-choice activities compared to those involved in the future extrinsic goal condition. Thus, also the effect of double goal framing relative to future extrinsic goal framing was expected to be mediated by mastery orientation.

Method

Participants and Procedure

Participants were 245 19-20 year old first-year female students enrolled at a Belgian teacher-training college to become pre-school teachers. The study took

place during students' regular classes in small groups containing 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 (cell sizes ranged from 45 to 101)[1]. Students were unaware that they received different sets of instructions, which were collected at the end of the sessions after the students had written down their names on the instruction set. The students then studied during thirty minutes a text (4 pages long) about recycling, a text that they were required to read during their regular classes anyway. There was also a campus-wide initiative on recycling at the time, so the target activity fits with that initiative.

Instructions for participants in the intrinsic goal conditions stated that "reading the text could provide you some information about how to teach your future toddlers some simple ecological strategies so that they can do something for the environment" which was intended to represent the intrinsic goal of contributing to the community (Kasser & Ryan, 1993). Participants in the extrinsic goal conditions were told that "reading the text might provide you some information about how to save money on your future job by recycling materials" which was intended to represent the extrinsic goal of attaining monetary benefit (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. Then, they were tested for their conceptual understanding of the text material, as was announced prior to their reading of the study material. Subsequently, participants were told that the school library had additional material about recycling so they could acquire more information about this issue if they wanted to, and also that they could visit a plant that recycles used materials if they wanted to learn more about how recycling is done. Finally, a week later, participants were placed in randomly formed groups of six people, 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.

Pilot Study

The goal-content instructions were, prior to the actual study, administered among a group of pilot participants as to determine whether providing both types of goals would lead participants to perceive their current task-engagement as more useful than providing only one of both future goals. Twelve male and seventy-two female participants (N = 84) read one of the three sets of instructions (cell N's varying between 27 and 29) and rated 6 items to indicate whether they would perceive their task-participation as useful to attain the intrinsic goal of community contribution (3 items; α = .82) or the extrinsic goal of monetary-benefit (3 items; α = .91). A composite score of overall perceived utility value was computed by summing and averaging the importance placed on the intrinsic and extrinsic goal.

Measures

Experienced Stress. Four 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, varying between 1 (Completely Disagree) to 5 (Completely Agree). The alpha was .78.

Goal-orientations. A questionnaire assessing students' mastery and performance orientations was administered. Some items were adapted from existing questionnaires (PALS; Midgley, Maehr, Hicks, Roeser, Urdan, Anderman, Kaplan, Arunkumar, & Middleton, 1997; Pintrich, Smith, Garcia, McKeachie, 1991), while others were created. All items were adapted to the specific situation by changing the stem from 'studying this course' to 'reading this text'. Because an exploratory factor analysis using promax rotation revealed the predicted three-factor structure, the three subscales were constructed by averaging the items. Cronbach's alpha were .93 for performance-avoidance orientation (5 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 (4 items; 'I feel good about myself when I perform better than others on the test about this text'), and .97 for mastery orientation (5 items; '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 initial, 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 blind to 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 was kept by the regular teacher of the class concerning who visited the recycling plant and participants' visit of the library was automatically registered because students needed to sweep 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 who 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

Pilot Study

Contrast-cell analyses of the pilot study indicated that participants in the future intrinsic goal condition (mean = 1.24; SD = .46) saw their task-participation as less useful to attain the extrinsic goal of monetary-benefit compared to the participants involved in the future extrinsic goal condition [mean = 2.14; SD = .95; $t(81) = 4.21$, $p<.001$] and than participants in the future double goal condition [mean = 2.08; SD = .89; $t(81) = -4.43$, $p<.001$]. The latter two conditions did not differ from each other on this outcome. Further, participants in all three conditions perceived their task-engagement as equally useful to attain the intrinsic goal of community contribution. Most importantly, across goal-contents, participants in the future double goal condition (mean = 3.23; SD = 52) saw their task-participation as more useful than those in the future intrinsic goal condition [mean = 2.75; SD = 40; $t(81) = -3.87$, $p<.001$] and as equally useful as those in the future extrinsic goal condition (mean = 3.16; SD = .46). The latter participants perceived their task-engagement as more useful than those involved in the single future intrinsic goal condition ($t(81) = 3.23$, $p <.001$). In short, it appears that providing both types of future goals enhances the

perceived utility of the learning task compared to framing the activity in terms of a single future intrinsic goal, but not in comparison with a single future extrinsic goal.

Primary Study

Preliminary Analyses

Table 1 shows the intercorrelations between the six dependent variables. It can be noticed that 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.

Insert Table 1 and 2 about here

Next, a MANOVA-analysis was conducted 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 [$F(12, 476) = 8.96$, $p < .001$]. Subsequently, one-way ANOVA-analyses were performed for each of the dependent variables. They all turned out to be significant and are reported in Table 2, which allowed us to test the apriori formulated contrasts. Means and standard deviations of the outcome measures for the three conditions are reported in Table 2.

Primary Analyses.

Contrast-cell Analyses. To test the conflicting hypotheses derived from expectancy-value theories and SDT each of the single future goal-conditions were compared with the double future goal condition through contrast-analyses (See Table 2).

Contrast 1: Double goal Framing Versus Single Future Extrinsic Goal. Contrast-cell analyses indicated that, in comparison with future extrinsic goal framing, providing both types of future goals lessened people's feelings of stress $t(243) = 2.09, p < .05$. It increased participants' mastery orientation, $t(243) = -3.73, , p < .001$, and decreased their performance-approach orientation, $t(243) = 2.78, p < .001$, but both groups did not differ from each other in terms of performance-avoidance

orientation. Furthermore, double goal framing resulted in better test performance, $t(243) = -2.29, p < .05$, compared to the single future extrinsic-goal group.

Finally, chi-square statistics were executed to explore whether both conditions differed regarding the number of the free-choice opportunities participants engaged in. The number of free-choice activities (varying between 0 and 2) participants took advantage of in each condition are reported in Table 3. The chi-square statistic for these two conditions was significant (χ^2 (2, $N = 146$) = 5.15, $p < .001$), indicating that more participants in the double goal condition (62%) engaged in at least one of the free-choice activities than participants in the future extrinsic goal condition (43%).

Insert Table 3 about here

Contrast 2: Double goal Framing Versus Single Future Intrinsic Goal.

Next, the double goal framing condition was compared with the single future intrinsic goal condition. Participants in the future intrinsic goal condition experienced their task-participation as less stressful $t(243) = -2.40, p < .05$, became more mastery-oriented, $t(243) = 4.15, p < .001$ and were less performance-approach oriented, $t(243) = -4.41, p < .001$ compared to people in the double goal condition. There were no differences between both groups in terms of performance-avoidance orientation, $t(243) = -.84, p < .40$, but future intrinsic goal framing resulted in better performance, $t(243) = 2.51, p < .05$ compared to the double goal group. Finally, concerning persistence, chi-square statistics of these conditions indicated that more participants in the future intrinsic goal condition (73%) took advantage of the free-choice activities than participants (62%) in the double goal-condition (χ^2 (2, $N = 144$) = 5.89, $p < .001$).

Mediational Analyses. A final important issue concerned the examination of mastery orientation as a mediator of the goal-content effects upon 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 the mediator remains a significant predictor of the outcome. Mediational results are reported in Table 4. In the upper half, the mediational results

for the future intrinsic versus the double goal conditon are reported, while the results of the future extrinsic versus the double goal condition are reported in the bottom half.

Insert Table 4 about here

First, consider the future intrinsic versus future double goal framing effect. For this contrast, the first requirement of the Judd and Kenny procedure was satisfied—the independent variable was significantly related to both performance and persistence. Further, the contrast effect did predict mastery orientation, and mastery orientation predicted both persistence and performance. Thus, these 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 upon both performance and persistence became nonsignificant after entering mastery orientation in the equation.

Second, consider the effect of future extrinsic versus double goal framing. The contrast significantly predict performance, but was marginally related to persistence. The contrast significantly predicted mastery orientation and mastery orientation was a significant positive predictor of both outcomes. Most importantly, the direct significant contrast-effect upon both performance and persistence became nonsignificant after entering mastery orientation, suggesting that mastery orientation plays a mediating role in explaining the future extrinsic versus double goal condition effect.

Discussion

Several theorists (DeBacker, Greene, & Miller, 1999; Eccles & Wigfield, 2002; Lens, Simons, & Dewitte, 2002) have posited and empirically demonstrated that the degree of perceived instrumentality or the utility value of one's present task-engagement plays an important role in predicting students' academic functioning. Their reasoning is largely based upon a quantitative reasoning about motivation, holding that the more one is able to foresee the (future) importance of the activity, the better one will function. Accordingly, we reasoned that the learning process should be facilitated if we tell participants that the present learning task served the attainment of two future goals rather than one future goal.

However, from the perspective of self-determination theory (SDT; Deci & Ryan, 2000; Kasser & Ryan, 1996; Ryan & Deci, 2000), it is important to take into account the content of the future goal that increases the utility value of the task. Within SDT, 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 towards 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 et al., 2003a; Vansteenkiste et al., 2003b). The present study extended this research by examining how framing students' learning in terms of a single future intrinsic or extrinsic goal stands in relation to emphasizing that the present activity is relevant to attain both types of future goals.

The results of the present study are in favor of SDT by showing that the quality of the goals that teachers try to promote matters. More specifically, although framing a learning activity in terms of two types of goal contents (intrinsic plus extrinsic) promotes a mastery orientation, performance and persistence compared to only focusing on the attainment of extrinsic goals, as was predicted on the basis of the notion of utility value (Eccles & Wigfield, 2002), the opposite set of findings emerges 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 from the learning task to the external indicators of worth. This shift results in an increased concern about doing better than other students at the task at hand rather than trying to fully understand the subject of the reading material. Moreover, participants' performance and persistence is forestalled.

These findings are in line with the results obtained by Vansteenkiste et al. (2003b) where it was shown that extrinsic goal framing resulted in poorer academic functioning compared to 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 rather than 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 meaningful mediator of the effects of future intrinsic and future extrinsic goal framing relative to double goal framing upon 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 noteworthy of discussion in the light of the present debate on the role of performance-approach goals in educational contexts (Pintrich, 2000; Midgley et al. 2001). Specifically, some researchers (Barron & Harackiewicz, 2001) hold that being focused on the attainment of both mastery and performance goals yield positive learning outcomes (i.e., multiple goal perspective), while 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), 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 superficial degree of understanding.

However, we believe that the present results also shed a somewhat 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 due to 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 primarily be 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 in the learning material. In the present experimental situation, it's likely that people who were oriented towards performance-approach goals under influence of the extrinsic goal manipulations became less mastery-oriented, suggesting that both orientations can indeed be conflictual during the learning process itself. However, when not engaged in the learning process, it might for some outcomes (Middleton et al., 2001) be adaptive to simultaneously pursue performance-approach and mastery goals, for instance when students need to rehearse their study material prior to their exams once they understand its content.

To summarize, we suggest that the (mal)adaptive role of performance-approach goals would depend on the moment of the study process that they are applied. Being performance-approach oriented is maladaptive during the active learning process thereby interfering with a full comprehension of the study material, but it might provide learners with energy 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 only of female participants. Although previous research (Vansteenkiste et al., 2003a, 2003b) has found that similar goal-content effects apply to male subjects, it would be important to examine whether male participants' learning would also be undermined when being provided with two future goals rather than one 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 et al., 2003a, 2003b), it remains to be investigated

whether promoting the attainment of two other types of intrinsic and extrinsic goals would also undermine the learning process compared to one single intrinsic goal.

Third, it's 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 valuable 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. To put it differently, more is not always better. In contrast, the content of the future goal that is promoted by the authority matters so that 'less is sometimes more'. Only contexts that focus on the attainment of future goals that are intrinsic in nature facilitate the learning process, while contexts that value the achievement of future extrinsic goals undermine one's optimal academic functioning, presumably because both types of goals induce a qualitatively different approach of the learning task.

We believe that this study taken together with the other studies on goal-content (Vansteenkiste et al., 2003a; Vansteenkiste et al., 2003b) has important ramifications for value-theories (Eccles & Wigfield, 2002; Feather, 1990, 1992). It appears that it is not only important to consider whether people value their task-engagement, but also what kind of values they are striving for during their activities. Future value-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 concept of task-value. This might help us to further understand why some students, in spite of their high motivation, still fail to obtain good grades and do not voluntarily persist at learning activity.

Foot Notes

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

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Table 1 – *Correlations (Below Diagonal) Between Mediating and Dependent Variables and Internal Consistencies (Diagonal)*

	(1)	(2)	(3)	(4)	(5)
Experienced stress (1)	.78				
Mastery orientation (2)	-.63***	.97			
Performance-approach orientation (3)	.30***	-.69***	.93		
Performance-avoidance orientation (4)	-.02	-.07	.02	.96	
Performance (5)	-.49***	.41***	-.33***	-.18**	.92
Persistence (6)	-.44***	.36***	-.27***	-.08	.71***

NOTE: *p <.05; **p <.01; ***p <.001

Table 2 - *Cell Means and Standard Deviations (Between Brackets) For The Three Future Goal Conditions*

	Future Intrinsic Goal Condition (N = 99)	Double Goal Condition (N = 45)	Future Extrinsic Goal Condition (N = 101)	F-value
Experienced stress	2.66[a] (1.04)	3.40[b] (1.93)	4.04[c] (2.11)	16.30***
Mastery orientation	3.20[a] (.62)	2.70[b] (.81)	2.25[c] (.65)	50.28***
Performance-approach orientation	2.28[a] (.69)	2.87[b] (.77)	3.20[c] (.60)	48.60***
Performance-avoidance orientation	2.12[a] (.69)	2.23[a] (.77)	2.29[a] (.76)	1.28
Performance	6.57[a] (5.59)	6.07[b] (1.13)	5.57[c] (1.07)	18.15***

NOTE: *** $p < .001$

Means with the same letter are not significantly different (read within rows).

Table 3 – *Number of Free-choice Activities Participants Engaged in For Each Condition*

	Future Intrinsic Goal Condition (N = 99)	Double Goal Condition (N = 45)	Future Extrinsic Goal Condition (N = 101)
0	27	17	58
1	1	3	3
2	71	25	40

Table 4

Betas for the Paths in the Mediational Analyses using Regression for the Independent Variables of Type of Goal-framing

I vs D goal framing	Step 1	Step 2	Step 3	R-square
Test performance	.20*	.28***	.12	.11***
Free-choice persistence	.17*	.27***	.09	.10***

E vs D goal framing	Step 1	Step 2	Step 3	R-square
Test performance	.19*	.31***	.09	.13***
Free-choice persistence	.14+	.27***	.05	.09***

Notes: 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 = total amount of variance explained in a dependent variable after entering the independent variable and the mediating variable.
I = Intrinsic, E = Extrinsic, D = Double

* $p < .05$; ** $p < .01$; *** $p < .001$