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The Psychology of Students' Goals: The Effects and Interplay of Goal Framing, Self-
Discrepancy, Regulatory Focus, and Autonomy

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Abstract

This study investigated the interplay of goal framing, self-discrepancy, regulatory focus, and autonomy and controlled motivation in setting academic goals. Participants were 125 undergraduate students taking various psychology courses at King's University College at *The University of Western Ontario*. Three questionnaires were given to assess various motivational factors looking at two main motivational aspects: 1) positive motivation variables (i.e. autonomous goal, promotion focus, ideal goal, and positive framing), and 2) avoidance motivational variables (i.e. controlled goal, prevention focus, ought goal, and negative framing). The strongest findings include that positive motivational variables tend to correlate more highly with each other than avoidance variables; that the strongest correlations tend to involve autonomous goals; that autonomy was the strongest predictor for enjoyment; and that negative framing was independently predicted by both the autonomous and controlled goal measures. Future studies can investigate the notion of autonomous negative framing and controlled negative framing as two possible types of negative framing, possibly yielding unique outcomes.

The Psychology of Students' Goals: The Effects and Interplay of Goal Framing, Self-Discrepancy, Regulatory Focus, and Autonomy

In many ways, goals are an essential aspect of our lives. Not only do goals influence how well we perform, but they can also illuminate how we understand our aims and how we come to have certain affective experiences and motivation. As Albert Bandura put it, "The regulation of motivation by goal setting is a remarkably robust phenomenon" (see Locke & Latham, 1990, p. xii). One sees the pursuit of goals in almost every human endeavor: academics, work and career, exercise and nutrition, relationships, spirituality, and so on. Accordingly, goals and goal setting have been important topics in motivation research. Some research has focused on specific target goals defining a particular level of achievement (e.g. Locke & Latham, 1990; Locke & Latham, 2002; Bandura & Locke, 2003), whereas others have looked at broader goals that include why a person is striving, such as to be seen as intelligent (e.g. purpose goals; Elliot & Church, 1997; Harackiewicz & Sansone, 1991). The current study will be investigating the two types of goals and their effects on emotions, and motivation. This study will further the existing research and literature on goals and motivation in an academic setting. It will be seen that much of that research focuses on how goals affect performance as a way of demonstrating the motivating influence of goals. The present study will not examine performance, but will examine the links among the various aspects of goals.

One major example of such motivation research on goals is Locke & Latham's (1990) goal setting theory, which looks at what the authors refer to as the two main attributes of goals, namely, their content and intensity (i.e. how specific and how challenging they are). The core finding of goal setting theory is that setting more specific goals that are challenging yet

attainable will lead to better performance (Locke & Latham, 1990). Large bodies of experimental research, where goals of varying levels of challenge and specificity are assigned, have consistently found support for goal setting theory, and similar findings also exist in a good amount of natural research looking at goals that people pursue in actual work and academic settings (e.g. Latham & Lock, 2006; Locke & Latham, 2002, 2006).

Challenge is only one aspect of specific goals that is important, and according to Roney and Lehman (2008), challenging and specific goals do not always ensure better performance depending on the way goals are set. The concept of “goal framing, “ which is the mental representation that people have for goals, can illuminate how people set goals (Roney, Higgins & Shah, 1995; Roney & Lehman, 2008; Roney & O’Connor, 2008). In achieving the same goal of getting 85% on a test, people can either frame the goal positively (i.e. strive to ensure success; trying to get 85% or above) or negatively (i.e. strive to avoid failure; trying not to get 85% or below), leading to different effects in performance, motivation and emotions. Roney and his colleagues have consistently found in their studies that negative framing led to poorer performance, whereas performance results were non-significant for those who engaged in positive framing (Roney, Higgins & Shah, 1995; Roney & Lehman, 2008; Roney & O’Connor, 2008). Further details on the results of these studies are described below

In their investigation of effects of goal framing, Roney et al., (1995) conducted two experiments involving the solving of anagrams when participants were apt to succeed (study 1) and when participants were apt to fail (study 2). In study 1, participants were assigned to receive either instructions with positive framing (you win if you get 22 out of 25 correct), or instructions with negative framing (you don’t win if you get 4 out of 25 wrong; p. 1154). In study 2, instead

of giving specific goals that were framed positively or negatively, Roney et al., (1995) used positively or negatively framed feedback throughout the solving of anagrams. For example, the incorrect answer feedback for the positive framing condition was, “You didn’t get that one right,” and for the negative framing condition was, “No, you missed that one” (p. 1157). In the two studies, participants in the positive framing condition reported higher persistence (both studies), whereas negative framing led to worse performance (study 2). Both studies showed that dejection-related emotions (such as disappointment) were affected more by positive framing, and agitation-related emotions (such as anxiety) were affected by negative framing (Roney et al., 1995, p. 1159).

Further studies confirm that goal framing is indeed another aspect of specific target goals – independent of challenge and expectancy for success – that has influence over individuals’ affect, motivation, and performance. For example, Roney and Lehman (2008) administered the Academic Goal Questionnaire to university students during a school year, which asked them to report their specific grade (goal) that they want for the course, the students’ goal expectancy (i.e. how likely they feel that they will be able to reach their goal), and the students’ perceived importance of reaching the goal. To gauge students’ positive and negative framing, the questionnaire asked them to what extent they will feel certain emotions under the circumstances where they anticipate to reach the goal (i.e. positive framing; e.g. satisfied, proud, happy, relaxed) and where they anticipate *not* to reach the goal (i.e. negative framing; e.g. anxious, sad, disappointed, ashamed; p. 2695). Roney and Lehman (2008) reasoned that higher positive emotions were indicative of the academic goal being positively framed (i.e. that one would anticipate positive feelings if a goal was met), and higher negative emotions were indicative of

the academic goal being negatively framed (i.e. that one would anticipate negative feelings if a goal was unmet).

Roney and Lehman (2008) found that negative framing, particularly as defined by the negative emotion shame, predicted poorer performance among university students for an exam, independent of goal level (challenge), expectancy, and earlier performance (p. 2699). This demonstrated that the detrimental effects of negative framing are not caused by differences in goal level, expectancy, or previous performance. This was consistent with Roney and Lehman's (2008) predictions, as it was hypothesized that negative framing itself is potentially harmful for performance because it is associated with anxiety, which interferes with performance. Although there was no direct analysis of anxiety in this study, Roney and O'Connor (2008) – described in detail below – found that emotional anxiety does mediate the detrimental effect that negative framing of specific academic goals has on university students' exam performance. The research described so far examined specific target goals; academic grades provide a good example, because they offer a precise description of what a person adopts as their target (e.g., 85%). To get more insight into what these goals mean to people, one can look at the link between specific goals and broader "purpose goals." Research by Roney and O'Connor (2008) investigated this link between the "how" of goal setting (i.e. goal framing) and the broader "why" of goal setting (i.e. purpose goals).

The purpose goals studied by Roney and O'Connor (2008) come from the three-factor model of achievement goals proposed by Elliot and his colleagues (e.g. Elliot & Church, 1997). The three-factor model involves performance approach goals, performance avoid goals, and mastery goals (Elliot & Church, 1997). The two kinds of performance goals are concerned with

how others view our competence. Performance-approach goals are focused on demonstrating high ability and predict better performance, whereas performance-avoid goals are focused on avoiding demonstrating low ability and predict poorer performance. Mastery goals are more concerned with learning, and growing and developing one's competence, and the results for associated performance have been mixed. Roney and O'Connor (2008) predicted that these broader purpose goals are linked with aspects of specific goals (i.e. challenge, framing).

Roney and O'Connor (2008) hypothesized that specific target goals are more proximal than these broader achievement goals, and that variables associated with specific goals would mediate the link between purpose goals and performance (p. 484). Their results were consistent with their hypothesis in that goal difficulty mediated the positive link between performance-approach goals and performance, and between and mastery goals and performance (p. 487). Furthermore, they found that negative framing mediated the negative correlation between performance-avoid goals and performance and, as mentioned earlier, that anxiety mediated the link between negative framing and poorer performance (p. 487). The results found by Roney and O'Connor (2008) demonstrated that there *is* a link between goal framing and broader purpose goals.).

The current study will further investigate this link between the “how” of goal setting (i.e. goal framing) and the “why” of goal setting (i.e. ideals and oughts as well as promotion and prevention-focus). Additionally, this study will look at the role of autonomy in goal setting as a factor that may affect how individuals set and perceive their goals.

Regulatory Focus Theory and Self-Discrepancy Theory

The theoretical concept of goal framing was derived from Higgins' (1987) self-discrepancy theory. Self-discrepancy theory posits that discrepancies between ideal and actual selves versus discrepancies between ought and actual selves differ in terms of their focus and emotional impact (Higgins, 1987, 1997). Specifically, ideal standards are more focused on positive aspects associated with attainment (gain and non-gain), whereas oughts standards are focused on negative consequences of not living up to these standards (non-loss and loss; see Higgins, Roney, Clowe & Hymes, 1994, p. 277). In terms of affect, when individuals fail to attain their ideals (hopes and aspirations), they experience feelings of dejection such as sadness, disappointment, and dissatisfaction; whereas when individuals fail to attain their oughts (responsibilities and obligations), they experience feelings of agitation such as anxiety, uneasiness, fear, and threat (Higgins, 1987, 1997). Given the nature of positive and negative framing, parallels seem to exist between self-discrepancy theory and goal framing, with ideals being similar to positive framing, and oughts being similar to negative framing.

Building from self-discrepancy theory, Higgins (1997) developed the regulatory focus theory. Regulatory focus theory proposes two regulatory styles: 1) promotion-focus, which is concerned with accomplishments and aspirations, and 2) prevention-focus, which is concerned with safety and responsibilities (Higgins, 1997). Promotion and prevention-focus are also analogous with ideals and oughts, respectively (e.g. Higgins freely uses the terms "promotion ideals" and "prevention oughts"; see Higgins, 1997, p. 1288). For the purposes of this study, regulatory focus refers to the more chronic and remote personality characteristic that affects people's goal setting, whereas self-discrepancy reflects specific ideal and ought goals or standards.

The current study will link self-discrepancy theory and regulatory focus theory with goal framing. I hypothesize that, because promotion-focus is associated with ideals, people who are chronically promotion-focused will be inclined to set specific goals that reflect their hopes and aspirations. Conversely, because prevention-focus is associated with oughts, people who are chronically prevention-focused will be inclined to set specific goals that reflect their sense of obligation and duties. Therefore when people set their goals, promotion-focused people's specific goals will correspond more with their ideals, and prevention-focused people's specific goals will correspond more with their oughts. Consistently, chronically promotion-focused people will be inclined to engage in positive goal framing, whereas chronically prevention-focused people will be inclined to engage in negative goal framing.

All of the above hypotheses predict that the more remote "why" of goal setting (people's regulatory focus) will affect the more proximal "how" of goal setting (how their goals are framed). Interestingly, although all grow out of self-discrepancy theory, the three theoretical concepts, namely, regulatory focus, ideal and ought standards, and goal framing, have not been investigated together.

Self-Determination Theory

Deci and Ryan's (2000a) self-determination theory is a macro-theory of human motivation, which asserts that individuals in every culture commonly share three fundamental psychological needs: autonomy, competence, and relatedness. As Deci and Ryan (2000a) point out, although all three needs were consistently verified in all cultures, different cultures may weigh the needs for wellbeing differently. In the western world, for instance, the need for autonomy is arguably most valued and is most researched (Deci & Ryan, 2000a).

Autonomy (or autonomous motivation) is defined as “behaving with a full sense of volition and choice,” whereas the opposite, called controlled motivation, is defined as “behaving with the experience of pressure and demand toward specific outcomes that comes from forces perceived as external to the self” (Deci & Ryan, 2008a, p. 14). Deci and Ryan (2008b) specify that a person is autonomously motivated when he or she has identified with an endeavor’s value and integrated it into the sense of self; whereas a person has controlled motivation when he or she is behaving contingently upon external rewards and punishment and feels pressure to think, feel, or act in a certain way. Autonomous motivation, as opposed to controlled motivation, is linked with greater persistence, more positive affect, better performance and creativity, and better psychological wellbeing (Deci & Ryan, 2008b). Research consistently supports the human psychological need for autonomy in motivation (e.g. Deci & Ryan, 2008a, 2008b; Sheldon & Elliot, 1998; Ryan & Deci, 2011).

The autonomy versus controlled distinction may be pertinent to understanding the impact of specific target goals that individuals pursue. When one sets a specific goal, it may or may not be autonomously chosen. For example, they may be established by other people (e.g., parents), or as external requirements needed for programs or funding. Following from self-determination theory, such goals can potentially undermine enjoyment, and perhaps motivation.

In addition to this, there are some parallels between the autonomous/controlled distinction and self-discrepancy theory. Controlled goals are not autonomously set and are linked with imposed standards (i.e. obligations and responsibilities; see Deci & Ryan, 2000a), which are analogous with ought standards (see Higgins, 1997). Therefore, I predict that having controlled

goals are associated with more ought standards, which, as stated before, are linked with more negative framing.

Conversely, since autonomous goals are linked with intrinsic motivation and better affective experiences (Deci & Ryan, 2000b), I hypothesize that autonomy in goal setting will predict course enjoyment and possibly more ideals and positive framing.

Overview and Hypotheses

The present study investigates what specific target goals mean to people, and how this subsequently determines the impact of the goal. Furthermore, the present study links together several different theories regarding goals and motivation. Excitingly, this study is the first one, to my knowledge, that brings these different theories together. Following is an overview of the main predictions for this study.

1. People who are chronically prevention-focused will tend to set their goals in accordance with their oughts and are more likely to frame goals negatively.
2. People who are chronically promotion-focused will tend to set their goals in accordance with their ideals and are more likely to frame goals positively.

Furthermore, following from self-determination theory:

3. People who report goals that are controlled are more likely to have those goals consistent with their oughts and are more likely to frame their goals negatively.
4. People who set goals that are autonomous will have more enjoyment than people who set goals that are controlled. People who set autonomous goals are possibly going to set their goals more in accordance with their ideals and are more likely to engage in positive framing.

The first two predictions flow from individual differences in regulatory focus. The final two predictions relate to whether goals are autonomous or controlled, factors that may be somewhat situation-specific (for example, when goals are imposed for entrance into a specific program, or to receive a scholarship). In addition to the predictions above, this study will allow investigation of possible personality-situation combinations that can potentially make conflicting predictions.

Method

Participants

Participants consisted of 125 undergraduate students enrolled in Psychology 1000 or various second year psychology courses at King's University College at *The University of Western Ontario*. The age range of participants was 17 to 51 (*Mean Age = 20.07, Standard Deviation = 4.07*). The percent of female participants was 73.6% (*Mean Age = 20.09, Age Range = 17-51, Standard Deviation = 4.43*) and for males was 26.4% (*Mean Age = 20.00, Age Range = 18-33, Standard Deviation = 2.79*). Potential participants signed up on a volunteer basis via the Sona computer system, which is a cloud-based participant management software. Potential participants were either assigned a day to come in to the lab for participation, recruited in classroom settings, or completed their survey online via a survey system called *survemonkey.com*. In the in-person sessions, potential participants were given an informed consent form to read over and sign, making them official participants. In the online sessions, potential participants were emailed a link and had to agree to the informed consent form to become official participants. Psychology 1000 students could receive bonus marks for completing a related assignment. Participants were free to withdraw from the study at any time

and still receive credit for the written assignment that follows. T-tests revealed that participants from first year Psychology classes were not significantly different from upper-year students on any of the variables studied.

Materials

Participants completed the following questionnaires in the order in which they are described below.

The first questionnaire is a revised version of the Academic Goal Questionnaire (Roney and Lehman, 2008), which measures goal framing, with added questions to measure autonomy / controlled, and ideal and ought goals (see Appendix A). Item 1 measures a) participant's grade percentage goal (measured on a continuous scale), b) perceived goal difficulty, and c) perceived goal importance. Items 2 and 3 measure goal framing via participants' anticipated emotions if the goal was or was not attained.

A factor analysis was conducted on the eight items for goal framing and indicated that positive and negative framing items loaded on two separate factors. The reliability analyses indicated a Cronbach's Alpha of $\alpha = .78$ for the positive framing items and $\alpha = .86$ for the negative framing items. Two new variables called positive framing and negative framing were computed via averaging the positive framing items and the negative framing items, respectively.

Items 4 to 9 measure the degree of autonomy associated with the specific goal. These autonomy items were developed for this study based on a measure of autonomy/control in academic situations in general (Ryan & Connel, 1989) and from a previous honor's thesis (Hudson, 2004). A factor analysis was conducted for all of six items from the autonomy and controlled section of the Academic Goal Questionnaire (Items 4-9). Factor one has all the

controlled items 4-6 loading on it; Factor two has all of the autonomy items 6-9 loading on it.

The reliability analyses indicated a Cronbach's Alpha of $\alpha = .78$ for the autonomous items and $\alpha = .66$ for the controlled items. Two new variables were computed called controlled (Items 4-6) and autonomy (Items 7-9).

The final items (Items 10-12) were used in an unpublished doctoral thesis and measure people's ought and ideal goals (items 11 and 12), as well the actual grade participants expect to receive (item 10; Roney, 1990).

The second questionnaire (See Appendix B) is the Regulatory Focus Questionnaire devised by Higgins et al. (2001) which is designed to measure individual's motivation orientation: promotion focused or prevention focused. Some people treat prevention focus and promotion focus as end points of one dimension, other researchers have treated them as separate measures. This study will treat them separately. The questionnaire contains 11 items scored on a 5-point scale ranging from *1- never or seldom* to *5-very often*. Anchors terminology is sometimes adapted to fit the question (e.g. *never or seldom true* and *very often true*). Items 1, 3, 7, 9, 10, and 11 are measures of promotion focus with reverse items 1, 9, and 11. Items 2, 4, 5, 6, 8 are measures of prevention focus with reverse items 2, 4, 6 and 8. A sample promotion focus question is, "How often have you accomplished things that got you "psyched" to work even harder?" A sample prevention question is, "How often did you obey rules and regulations that were established by your parents?" Items measuring each focus are summed up and averaged to yield a promotion focus score and prevention focus score. Reliability of this questionnaire is demonstrated to be acceptable with a Cronbach's Alpha of $\alpha = 0.73$ for the promotion scale and $\alpha = 0.80$ for the prevention scale (Higgins et al., 2001).

A reliability test was conducted for the promotion-focus items from the Regulatory Focus Questionnaire while taking into account the reverse items, and the analysis indicated a Cronbach's Alpha of $\alpha = .65$, which was considered marginally internally reliable. Hence one of the items (Item 11) was removed to give a Cronbach's Alpha of $\alpha = .71$, which was considered more internally reliable. Similarly, another reliability test was conducted for the prevention-focus items from the Regulatory Focus Questionnaire while taking into account the reverse items, and the analysis indicated a Cronbach's Alpha of $.72$, which was considered internally reliable. Therefore two new variables were computed via averaging all the promotion focus items and all the prevention focus items. The two new variables were called promotion focus and prevention focus, respectively.

The third questionnaire (See Appendix C) is an adapted version of an Achievement Emotions Questionnaire (AEQ) devised by Pekruna, Goetz, Frenzel, Barchfelda, and Perry (2011) and will measure student enjoyment of their Introductory Psychology course. The questionnaire contains five items scored on a 5-point scale ranging from *1- strongly disagree* to *5-strongly agree*. Three enjoyment items were adapted from AEQ, and two were newly developed for this study.

A reliability test was conducted for all five items on the Course Enjoyment Questionnaire, and the analysis indicated a Cronbach's Alpha of $\alpha = .89$, which was considered internally reliable. Therefore, a new variable called Enjoyment was computed by averaging the scores from all the course enjoyment items.

Procedures

In person sessions. Participants completed the study in the psychology lab SA 050 at King's University College. Although the maximum number of students who can participate during one session is 12, the largest group that participated in one session consisted of three.

Participants were each given a booklet to complete. All booklets contained the same questionnaires in the same order. The questionnaires were in the order as it was presented in the materials section: 1) Academic Goals Questionnaire, 2) Regulatory Focus Questionnaire and 3) Achievement Emotions Questionnaire. On the participant's copy, the Regulatory focus questionnaire were called Personal Styles Questionnaire, the Achievement Emotions Questionnaire were called Course Enjoyment Questionnaire, and the Academic Goals Questionnaire retained its name.

After they have completed the questionnaires, participants were thanked and given the debriefing form. They were encouraged to ask any questions and be invited to complete an optional research assignment worth up to an extra 2.5% credit that counted toward their course mark in Psychology 1000.

For non-introductory psychology students, participants completed the study in their own classroom at King's University College as opposed to the SA050 lab. All procedures are the same except that non-introductory psychology students were not given the assignment at the end.

Online sessions. Participants were emailed the questionnaire on the day that they signed up for participation. All questionnaires are the same for the online session as well as for the in-person sessions except that they do not provide their names on the grade access form or anywhere else throughout the online survey to protect their confidentiality. For the purpose of

the assignment, they were asked to just provide their student number. Participants' questions and comments were communicated through email.

For non-introductory psychology students, all procedures are the same as those for online sessions for introductory psychology students except there was no extra credits assignment.

Results

Correlations among Variables

The means and standard deviations for the major variables are indicated in Table 1. Table 2 presents the correlations among the major variables in this study. The following sections will refer to these correlations in accordance with the hypotheses of the study.

Regulatory Focus and Goals

Regulatory focus and actual goals as reflecting ideal / ought goals. It was predicted that people who are chronically prevention-focused would tend to set their goals in accordance

Table 1

Means and Standard Deviations of Major Motivation Variables

<u>Grade Goal</u>	<u>Self Efficacy</u>	<u>Goal Importance</u>	<u>Negative Frame</u>	<u>Positive Frame</u>
77.34 (6.48)	2.56 (0.75)	2.06 (0.79)	3.00 (0.98)	1.54 (0.55)
<u>Controlled</u>	<u>Autonomous</u>	<u>Ideal Goal</u>	<u>Ought Goal</u>	
3.39 (0.94)	2.70 (0.94)	78.90 (7.22)	71.50 (7.29)	
<u>Promotion</u>	<u>Prevention</u>	<u>Enjoyment</u>		
3.59 (0.63)	3.38 (0.73)	3.71 (0.82)		

Note numbers in parentheses are standard deviations.

Table 2

Correlations Among Major Motivation Variables

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)
1) Grade Goal:	---										
2) Self-Efficacy	.313**	---									
3) Goal Importance	.025	.110	---								
4) Negative Framing	-.133	-.122	.434**	---							
5) Positive Framing	.081	-.130	.228*	.291**	---						
6) Controlled	-.133	-.118	.053	.241**	.136	---					
7) Autonomous	.281**	.249**	.151	.263**	.276**	-.170	---				
8) Ideal Goal	.661**	.304**	.047	-.107	-.016	-.132	.179*	---			
9) Ought Goal	.540**	.329**	.190*	.022	-.064	.006	.212*	.598**	---		
10) Promotion	.076	.247**	-.032	-.175	.052	-.245**	.321**	.127	.104	---	
11) Prevention	.023	-.017	-.157	-.059	-.000	-.065	.118	.074	-.016	-.036	---
12) Enjoyment	.276**	-.191*	-.152	.080	.052	-.086	.417**	.156	.263**	.118	-.003

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

with their ought goal. It was also predicted that people who are chronically promotion-focused would tend to set their goals in accordance with their ideal goal. Two interaction variables were created by multiplying: 1) ought goal and prevention focus; and 2) ideal goal and promotion focus. Both interactions were tested using multiple regression analyses with Actual Goal as the criterion variable. The interactions were not found to be significant, and therefore these predictions were not supported.

Regulatory focus, goal framing, and ideal / ought goals. It was predicted that people who are chronically prevention focused will be more likely to frame goals negatively. prevention focus was not significantly correlated with negative framing (see Table 2), therefore, this

prediction was not supported. Furthermore, the correlations in Table 2 indicate that, contrary to our prediction, prevention focus was not significantly correlated with ought goal, and ought goal was not significantly correlated with negative framing. Using multiple regression, no evidence was found indicating that positive or negative framing significantly predict prevention focus.

It was also predicted that people who were chronically promotion focused were more likely to frame goals positively. No relationship was found between promotion focus and positive framing. Although this prediction was not supported, a marginally significant negative relationship was found between promotion and negative framing, $r(123) = -.18, p = .053$. The analysis was repeated using negative framing ($\beta = -.251, t(87) = -2.305, p = .024$) and positive framing ($\beta = -.037, t(87) = -.342, ns.$) as predictors, and negative framing remained a significant predictor of promotion focus. In other words, people who are promotion focused are less likely to engage in negative framing. Furthermore, the correlations in Table 2 indicate that, contrary to our prediction, promotion focus was not significantly correlated with ideal goal, and ideal goal was not significantly correlated with positive framing. goals consistent with their ought goal. It was also predicted that people who have autonomous goals would set their goals more in accordance with their ideal goal. Two interaction variables were created by multiplying: 1) ought goal and controlled; and 2) ideal goal and autonomous. Both interactions were tested using multiple regression with actual goal as the criterion variable. The interactions were not found to be significant, and therefore these predictions were not supported.

Autonomous/controlled goals, goal framing and ideal / ought goals. It was predicted that people who report goals that are controlled are more likely to frame their goals negatively. It can be seen in Table 2 that this correlation was significant, $r(124) = .24, p = .01$. Surprisingly,

autonomy was also significantly positively correlated with negative framing, $r(122) = .26, p = .01$. Since there was also a marginally significant correlation between autonomous and controlled, $r(123) = -.170, p = .060$, both were entered simultaneously as predictors of negative framing using multiple regression. Betas were significant and positive for both autonomous, $\beta = .31, t(119) = 3.64, p < .001$ and controlled, $\beta = .29, t(119) = 3.38, p = .001$. Therefore, autonomous and controlled both significantly and independently predict negative framing of goals, meaning that both, people who feel their goals reflect their own preferences, and those who feel their goals are determined by others, are more likely to have negatively framed goals. Even when this analysis was repeated including positive framing as a predictor, both the autonomous and controlled variables remain significant and positive predictors, indicating that it is not the correlation between positive and negative framing accounting for these effects.

It was also predicted that people who set autonomous goals are more likely to frame their goals positively. Table 2 reveals a significant positive correlation between positive framing and autonomy ($r(121) = .276, p = .002$), but not between positive framing and controlled ($r(123) = .136, ns.$). Again, autonomous and controlled were both entered simultaneously into a multiple regression as predictors for positive framing. This analysis revealed that Betas were significant for both autonomous, $\beta = .31, t(118) = 3.54, p = .001$ and controlled, $\beta = .21, t(118) = 2.34, p = .021$. This suggests that people who set autonomous goals or controlled goals are both independently more likely engage in positive framing. It should be noted, though, that controlled is no longer a significant predictor ($\beta = .15, t(117) = 1.63, ns$) when negative framing is also entered as a predictor, but autonomous remains significant ($\beta = .25, t(117) = 2.72, p < .01$). This supports the predicted autonomy/positive framing relationship, and suggests that

the surprising relationship between positive framing and having goals that are determined by others is due to overlap with negative framing.

Enjoyment. It was predicted that people who set autonomous goals would report greater course enjoyment than people who have controlled goals. A regression analysis was conducted using Enjoyment as the criterion variable and autonomy and controlled as predictor variables. Controlled was not a significant predictor, $\beta = .02$, $t(118) = .07$, *ns.*, but autonomy was significant, $\beta = .42$, $t(118) = 4.88$, $p < .001$. Therefore, people who pursue goals that reflect their own preferences tend to enjoy their course more, but there is no evidence that pursuing goals because they are imposed by others undermines enjoyment.

The strong correlation between autonomous and enjoyment seems to account for some of the other unpredicted correlations with enjoyment. Self-efficacy, ideal goal, and promotion focus, which can be seen to be significant in Table 2, are no longer significant when entered in a multiple regression with autonomy predicting enjoyment. Grade goal and ought goal continue to significantly predict higher enjoyment independently of autonomy. It might be noted that ought goal is no longer a significant predictor of enjoyment when entered simultaneously with grade goal, however.

Additional Findings

Ideal and ought as predictors. There was a high correlation between ideal and ought goal, $r(125) = .598$, $p < .001$, therefore, these were both entered simultaneously as predictors for the other major variables. These analyses revealed only marginally significant effects with ideal goals predicting somewhat less negative framing, $\beta = -.19$, $t(122) = -1.68$, $p = .096$, and

predicting less controlled goals, $\beta = -.21$, $t(122) = -1.89$, $p = .07$. Also, ought goals predicted significantly lower course enjoyment, $\beta = -.27$, $t(120) = -2.40$, $p < .05$.

Autonomy and controlled as predictors. Table 2 indicates that promotion focus is positively correlated with autonomous goals, and that promotion focus is negatively correlated with controlled goals, supporting the notion that autonomy and promotion do link together as positive motivation variables. Moreover, prevention focus was correlated with neither autonomous goals nor controlled goals. As noted above, there was a marginally significant correlation between autonomous and controlled, and therefore, these were both entered simultaneously as predictors for the other variables not already discussed. Autonomous and controlled both significantly and independently predict promotion focus, $\beta = .29$, $t(119) = 3.30$, $p < .01$ for autonomous, and $\beta = -.20$, $t(119) = -2.29$, $p < .05$ for controlled. Promotion focus is thus associated with more autonomous goals, and with less controlled goals.

Goal level. Although the main predictions for this study did not relate to goal level, it has been an important variable in the motivation literature, for example as part of goal setting theory. Looking at Table 2, it can be seen that goal level is significantly correlated with ideal and ought goals, as well as autonomy and course enjoyment. It is not surprising that the goal people report pursuing is correlated with both ideal and ought goals. More interesting is the fact that higher goals are more likely to be seen as autonomous, and also with greater course enjoyment. A regression analysis entering goal level and autonomy simultaneously as predictors of enjoyment reveal that both autonomy ($\beta = .38$, $t(117) = 4.39$, $p < .01$) and goal level ($\beta = .18$, $t(117) = 2.08$, $p < .05$) predict greater enjoyment independently.

Another variable of interest was self-efficacy as measured by how the participants perceived their likelihood of attaining their reported goal level. Self-efficacy is an important variable that was often cited as the resource from which one finds the confidence to perform well (e.g. Bandura & Locke, 2003). Table 2 indicates that, higher self-efficacy was positively correlated with goal level, ideal and ought goals, autonomy, promotion focus, and enjoyment. These suggest that people who set their goals autonomously, and people who are chronically promotion focused, perceive themselves as more capable of achieving their goals. As noted before, although higher self-efficacy was also correlated with more course enjoyment, this relationship is because of autonomy.

Yet another variable worth noting was that of goal importance. Goal importance was highly correlated with negative framing and positive framing. However, when both were entered in as predictors of goal importance, negative framing was significant ($\beta = .40, t(120) = 4.71, p < .001$), whereas positive framing was no longer significant. Interestingly, as seen in Table 2, goal importance was correlated with ought goal but not ideal goal. It was also correlated with prevention focus, but not promotion focus.

Discussion

Results indicate that none of the predictions about ideal and ought goals differentially matching actual goals as a function of regulatory focus or of autonomy/control were supported. Predictions of promotion focus being correlated with positive framing and ideal goal, and of prevention focus being correlated with negative framing and ought goal, were not supported. However, promotion focus was found to be significantly and negatively correlated with negative framing independent of positive framing, which supports the notion that promotion has less to do

with negative framing. The predictions that autonomous and controlled would go with ideal and ought goals, respectively, was partially supported with ideal marginally predicting less controlled goals when entered in with ought goals. Intriguingly, both autonomous and controlled independently predicted both types of framing, with the latter not being predicted. Predictions that ideal would go with positive framing, and that ought would go with negative framing were partially supported, with ideal goals being marginally predictive of less negative framing. Finally, it was found that, consistent with our prediction, autonomy predicted enjoyment, however controlled did not. On top of that, results seem to suggest that the reason some other variables (self-efficacy, ideal goal, and promotion focus) were correlated with enjoyment was due to autonomy; only goal level and ought goal predicted enjoyment independent of autonomy.

This study linked several different major motivational theories that had a two-fold aspect to them, namely, a positive motivational aspect (positive framing, ideal goal, promotion focus, and autonomous goal), and a negative or avoidant motivational aspect (negative framing, ought goal, prevention focus, and controlled goal). Several interesting findings and patterns of findings were illuminated and are described and discussed below.

Firstly, among the most important theoretical findings was that positive motivational items seemed to be interrelated to a greater degree than negative (avoidance) items were. Negative framing was the exception in that it related to a number of the variables although, unexpectedly, it sometimes seemed more correlated negatively with approach items (e.g. with promotion focus and ideal goal). This suggests three things: 1) positive motivational items do link together as predicted; 2) positive motivation factors tend to be more predictive than those

that are negative in nature; and 3) negative framing might be somewhat different than the other theoretical avoidance constructs of goal setting. All three are worthy of investigation.

Secondly, results of this study also indicated that self-determination was the strongest variable in terms of its predictive strength. For instance, autonomous is correlated with higher grade goal, higher self-efficacy, higher positive framing, higher promotion focus, and higher course enjoyment (see Table 2). This is consistent with Deci and Ryan's (2008) view that autonomy is often associated with constructs deemed positive and beneficial such as enjoyment and pleasure.

Thirdly, to our surprise, negative framing was independently predicted by both autonomous and controlled goals. It was only expected that controlled would be linked with negative framing since a goal imposed by others was expected to elicit a "what if I can't live up to this" attitude. It seems surprising that autonomy, which is often linked with better psychological well-being, affect and motivation (Deci & Ryan, 2008), would be highly correlated with negative framing, which is often associated with anticipated emotions of shame and anxiety (Roney & Lehman, 2008). Future studies can investigate autonomous negative framing and controlled negative framing as two possible types of negative framing, possibly predicting different outcomes.

One possibility for explaining the "autonomous negative framer" is via defensive pessimism, where one worries over not attaining a goal, but has developed ways to ensure that the undesirable situation (of not attaining the goal) does not come true (Roney & Lehman, 2008). This strategy, surprisingly, involves assuming that they will fail, which seems to free defensive pessimists from harmful performance anxiety. Defensive pessimism can explain why some

people may have goals that are autonomously set but they feel they need to worry and over-prepare so they can avoid failure. In other words, defensive pessimists may set goals that are framed negatively as part of a motivational strategy. This study would have benefited from including a measure of defensive pessimism.

Since the autonomous and controlled variables emphasize the self or other people, respectively, other research making this distinction may help in understanding the nature of the two aspects of negative framing. For example, there has been literature citing the existence of an ought-own self-discrepancy versus ought-other discrepancy. Ought-self is who you think you should be, whereas ought-other is who you think others think you should be (Waters, Keefe, and Strauman, 2004). Waters et al. (2004) found that people experiencing higher ought-other discrepancy had significantly higher back pain intensity, higher level of depression, and higher psychological distress. They did not find the effect in people with actual and ought-self discrepancy, indicating that there is a difference when the pressure is coming from yourself versus when the pressure is from others, with the pressure coming from others being more detrimental to a person's affective experiences and wellbeing. Similarly, controlled negative framing may be more problematic than autonomous negative framing.

Theoretically, it is reasonable to predict that the ought-self discrepancy ("shoulds" that come from the self) could very well elicit autonomous negative framing, whereas ought-other discrepancy ("shoulds" that come from others) would elicit controlled negative framing. This suggests a possible way to understand autonomous negative framing. This might occur in someone who believes that they must and should do their best, therefore, if they have the ability to do something, then it falls under their responsibility to do it (hence the ought goal). If the

person fails to their best, then it is an indication that they have not done what they ought to have done. It is a goal autonomously chosen, yet one is so bound by one's conscience that one cannot violate it. With respect to controlled goals, it may be that having goals imposed by others in itself makes negative framing more likely, which was the basis for our initial prediction of a link between controlled goals and negative framing.

The ideas offered above would suggest that there should have been a link between ought goals and negative framing, which was not found in this study. It should be noted, though, that the ought goal measure used may not be the best measure for testing these ideas. The very high correlations with one's actual goal, and their ideal goal suggest that the measure mainly reflects a desired grade, and may not be sensitive to differentiating ideal from ought. Also, the measure only reflects an ought-other discrepancy, which means that, if the above logic is correct, it would not be related to negative framing that is autonomous.

Interestingly, even though we didn't have major predictions about goal level and importance, these were found to fit with approach motivation in general. It was also paradoxical how higher goals were linked with higher self-efficacy, since logically higher goals should be perceived as less achievable. It is likely that having approach motivation, as well as feeling capable, explains why they set higher goals. In other words, the higher self-efficacy leads to the setting of higher goals, not the reverse, and the nature of approach motivation encourages the person to aim more ambitiously. Also, it is intriguing how goal importance seems to go with negative framing. It would not be surprising if more important goals were associated with both types of framing (i.e., we would feel more emotions when succeeding/failing with respect to a goal that is important to us), but negative framing specifically seemed to correlate highly with

goal importance. To answer this puzzle, perhaps we need more insight on *why* the goal is important to people.

To note one improvement of this study over past research on negative framing, the reliability of the new negative framing items (i.e. disappointment, sadness, shame, and humiliation) indicated that these emotional items do well to capture the intended construct; earlier research used a single item. A weakness of this study is the controlled items, which yielded a marginal reliability score. However, these items were newly devised and used for the first time for this study, and can be improved in the future to capture more accurately and reliably the construct of controlled goals. Also, having a performance measure could have benefited the study immensely, but unfortunately, the number of consenting participants was scant. Previous studies have found that participants are more likely to consent if the study was conducted in person (as opposed to online). Yet this is problematic seeing that students now may be less likely to choose to come into the lab if they have the option of completing the study online. Moreover, online participation could have had issues such as people being less likely to read questions carefully and more likely to skip questions.

Finally, this study employed a correlational approach, meaning that it found that there exist relationships among some of the major motivational variables, but causality cannot be inferred. Future research might use experimentation to test causal predictions. To test for the two types of negative framing, a possibility is to have a two-by-two experiment with goal framing as one independent variable and autonomy / controlled as another independent variable, with measures such as performance and task enjoyment as dependent variables.

The general hypothesis was supported in that broader purpose goals and more specific aspects of goals are linked with each other. More specific patterns seem to suggest three things, 1) positive motivational items tend to be more predictive than avoidance motivation items; 2) setting autonomous goals seems particularly important, which is consistent with the concept of autonomy in the self-determination literature and 3) that negative framing seems to be unique in that both autonomous and controlled predict it independently. This study therefore further confirms the importance of having autonomous motivation in one's endeavors. We also demonstrated that there is overlap between motivation theories, yet differences between them highlight the fact that different researchers focus on different aspects of motivation. All of them may shed some light to illuminate the whole picture, and looking at them together has yielded fruitful results for further investigation. To our knowledge this is the first study combining these different aspects of goals, and continued research would help to clarify how specific academic goals are formed and how they affect emotions and behaviour.

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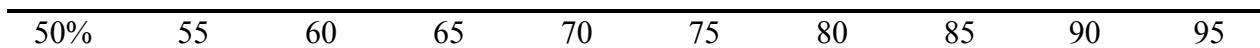
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Appendix A

Academic Goal Questionnaire

This questionnaire is about goals that people set for themselves for courses that they take in University. What would you say you set for your performance in Psychology 1000 (as of right now)?

1 a) Please check the point on the line below that represents the grade percentage you would set as your goal:



For the goal you indicated above, please answer the following questions:

1 b) How likely do you feel it is that you will be able to reach your goal?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

1 c) How important is it to you that you reach this goal?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

2. If you reached the goal, to what extent would you feel:

a) Pleased

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

b) Happy

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

c) Relieved

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

d) Reassured

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

3. If you did not reach this goal, to what extent would you feel:

a) Disappointed

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

b) Saddened

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

c) Ashamed

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

d) Humiliated

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

The following questions are about reasons why people have set certain goals for themselves.

Keeping in mind the goal that you have set for your academic performance in **Psychology 1000**, please rate each of the four reasons in accordance with determining your goal:

4. Are you pursuing this academic goal because somebody else wants you to?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

5. Are you pursuing this goal because it is an academic requirement (E.g. to enter a program, to get a scholarship)

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

6. Are you pursuing this goal because it is something that is expected of you?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

7. Are you pursuing this goal in order to motivate yourself to do as well as you can?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

8. Are you pursuing this goal to assure yourself that you have mastered the course material?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

9. Are you pursuing this goal because you enjoy the challenge it provides?

1	2	3	4	5
Extremely	Very	Somewhat	A little	Not at all

These questions aim to look at goals in a slightly different way. Psychologists have discussed three different types of standards: what we actually think we will accomplish, what we ideally would like to, or hope to accomplish (called “ideal” standards), and what we feel a sense of duty or responsibility to accomplish (called “ought” standards). These last two standards represent the difference between what we hope to accomplish (ideal) and what we feel is expected of us (ought).

10. What grade do you realistically think you will get in psychology 1000?

_____ %

11. If we think about grades as “ideals,” what grade would you ideally like to get or do

better than? _____ %

How important is this standard to you?

1	2	3	4	5	6	7
Extremely			Moderately			Not at all

12. What grade do you feel that you “ought to” get or do better than? _____ %

How important is this standard to you?

1	2	3	4	5	6	7
Extremely			Moderately			Not at all

Appendix B

Regulatory Focus Questionnaire

Please indicate your response to the following questions.

1. Compared to most people, are you typically unable to get what you want out of life?

1	2	3	4	5
never or seldom		sometimes		very often

2. Growing up, would you ever “cross the line” by doing things that your parents would not tolerate?

1	2	3	4	5
never or seldom		sometimes		very often

3. How often have you accomplished things that got you “psyched” to work even harder?

1	2	3	4	5
never or seldom		sometimes		many times

4. Did you get on your parents’ nerves often when you were growing up?

1	2	3	4	5
never or seldom		sometimes		very often

5. How often did you obey rules and regulations that were established by your parents?

1	2	3	4	5
never or seldom		sometimes		very often

6. Growing up, did you ever act in ways that your parents thought were objectionable?

1	2	3	4	5
never or seldom		sometimes		very often

7. Do you often do well at different things you try?

1	2	3	4	5
never or seldom		sometimes		very often

8. Not being careful enough has gotten me into trouble at times.

1 2 3 4 5
never or seldom sometimes true very often true

9. When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to.

1 2 3 4 5
certainly false certainly true

10. I feel like I have made progress toward being successful in my life.

1 2 3 4 5
never or seldom sometimes very often

11. I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them.

1 2 3 4 5
never or seldom sometimes very often

Appendix C

Course Enjoyment Questionnaire

Please indicate your opinion on your psych 1000 course.

1. I enjoy being in my psych 1000 class.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree

2. I enjoy acquiring new knowledge through the psych 1000 course.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree

3. For me the test for psych 1000 is a challenge that is enjoyable.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree

4. I am usually in a good mood when I am in my psych 1000 class.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree

5. Psych 1000 is overall a good class.

1	2	3	4	5
Strongly Disagree		Neutral		Strongly Agree