

Spring 2014

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Selecting and Striving for Academic Goals

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April, 2014

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Abstract

Selecting and striving for academic goals are key to a student's success; but goal commitment is vulnerable to moderating factors. Those moderating factors include hope, particularly agency hope (confidence in one's abilities; Snyder, 2002). Oettingen and Gollwitzer (2002) proposed that a mental contrasting (MC) self-regulation strategy (contrasting future positive outcomes with current reality) could impact goal commitment by drawing on the student's existing agency hope. To date this prediction has not been tested. 99 university students selected an academic goal and conducted either an MC or control exercise. Subjects completed agency hope scales before and after treatment and goal commitment scales following treatment. It was predicted that goal commitment scores would be greater for the MC group than for the control group; and that the treatment would not produce a change in agency hope scores from pre-test to post-test. The control group reported higher goal commitment scores, and both groups' agency hope scores increased following their MC or Control exercise, with a near-significant difference between the two groups. Study limitations and future research directions are discussed.

Selecting and Striving for Academic Goals

In any given semester, undergraduate students are busy with exams, quizzes, assignments, and projects. Each activity can take days or even weeks to complete. University Learning Skills Centres list smart goal setting as the first strategy for managing these various assignments and deadlines (Western University Learning Skills Services, personal communication, September 13, 2013). Many students heed the advice and set academic goals at the beginning of the year, but their commitment to those goals can wane as the semester progresses. Competing priorities and fluctuating levels of hope and efficacy can eat away at commitment to those goals. As deadlines loom, students may be forced to reconsider their ability to achieve their academic goals. This means that they must re-evaluate the effort required to attain their goal versus the likelihood that effort will produce success. Goals that students were once strongly committed to may need to be replaced by goals that may be easier to obtain but are not as central to academic success.

Students often engage in various techniques –or self-regulation strategies– to sustain their goal-directed behaviours. They will set to-do lists, promise not to watch TV until they've finished reading a chapter, or visualize what it would be like to get an A on a paper. If these techniques are not chosen wisely, however, they can meet with mixed success; visualizing a post-A celebration does not put words on a page. Further, these strategies are vulnerable to fluctuating levels of hope and self-efficacy. For example, after completing a to-do list, a student may realize how much effort will be required to complete her tasks, feel defeated, and abandon all hope of achieving a high grade.

The present study will look at the relationship between hope, the use of self-regulation strategies, and a student's commitment toward a self-selected academic goal. To begin, consider

the question: If academic goals are so vulnerable to mediating factors such as hope and self-regulation, why should students even set goals in the first place?

Importance of Goals

Research into the relationship between academic goals and academic achievement has found remarkably consistent results: that about 40% of the variance in final grades can be accounted for by grade goals (Diseth & Kobbeltvedt, 2010; Zimmerman, Bandura, & Martinez-Pons, 1992; Zimmerman & Bandura, 1994). Academic goals are considered achievement goals, which are detailed objectives designed to focus individuals toward specific outcomes (Diseth & Kobbeltvedt, 2010). Under the umbrella of achievement goals are mastery goals (i.e. goal to learn and acquire a skill) and performance goals (which can be considered ego-involved or competitive) (Morisano & Locke, 2012).

Both mastery and performance goals can be considered as either approach goals (e.g. “I would like to achieve an A in this class”) or avoidance goals (e.g. “I’d like to not be scrambling to finish this essay”; Diseth & Kobbeltvedt, 2010; Morisano & Locke, 2012). Researchers are also beginning to look at how academic goals can be set with multiple components including major and minor goals, or as a combination of mastery/performance and approach/avoidance (e.g. “I’d like to memorize this Abnormal Psychology chapter in order to avoid failing the test”). Additionally, studies are also beginning to consider other factors such as age, perfectionism, and subconscious motivations (Morisano & Locke, 2012).

Setting an academic goal provides students with a specific objective which, according to Bandura’s social cognitive theory, causes an affective and cognitive response (e.g. excitement and anticipation) which will drive one’s performance toward an identified goal (see summary Zimmerman et al., 1992). Setting a goal affects behaviour in three ways: goals provide focus on

goal-directed behaviours, and support students in avoiding distractions; goals increase students' effort so that it is on par with task difficulty; and goals cause students to persist in their commitment to their goal-directed behaviour (Latham & Locke, 1991; Morisano & Locke, 2012).

Goal setting theory. Locke and Latham (2002) proposed a formal explanatory model to explain their goal setting theory (see Figure 1).

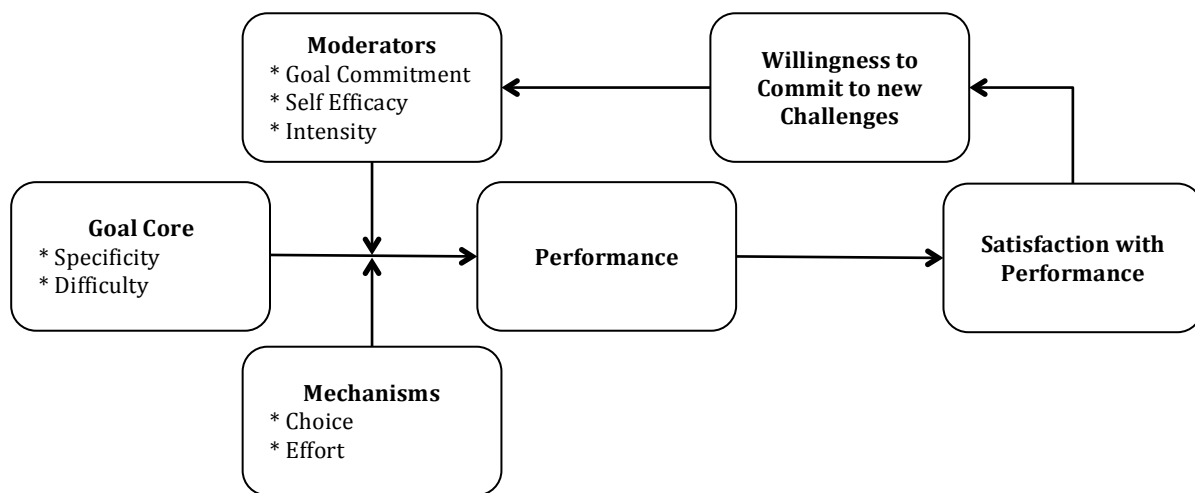


Figure 1. Goal setting theory diagram. (Locke, E., & Latham, G. P. (2002), p. 714.

There are two important attributes to goals: the first attribute is content, which is comprised of goal difficulty and goal specificity. These can be seen as subsets of “Goal Core”. When studying the relationship between goal difficulty and performance, Locke and Latham found difficulty effect sizes (d) ranging from .52 to .82 (Locke & Latham, 2002). All studies agree that as difficulty increases, so does performance, and that there is a maximal return on goal difficulty, after which at a certain point of difficulty (for example at individual limits in ability), performance either levels off or decreases. The second component of the goal content attribute is

goal specificity, which can range from “do one’s best” to a specific measurable outcome. Just as “do one’s best” is far too general to predict performance, specificity has not been found to be a reliable predictor of performance when measured alone. By adding specificity to difficult goals, expected performance requirements are made clear, performance improves, and outcome variability is reduced (Locke & Latham, 2002). When selecting an academic goal, participants in this study will be asked to describe a specific goal that is both challenging and realistic to achieve in a specified timeframe, thus attempting to elicit both specificity and optimal goal difficulty.

The other attribute in a goal is intensity, or the effort involved in the mental process of goal striving (Latham & Locke, 1991). In this model, intensity appears as a “Moderator” of goals. The most common way of studying intensity is to look at goal commitment, specifically, the moderating effect that commitment has on the pursuit of goals.

Goal Commitment

Goal commitment plays a central role in Locke & Latham’s goal setting theory. One hint at the importance is the numerous times researchers reference a direct quote from Locke, Latham and Erez’s seminal paper (1988) in which they state “it is virtually axiomatic that if there is no commitment to goals, then goal setting does not work” (p. 23). Much like the three ways that setting goals promotes goal-directed behaviour (focus, effort, and persistence), committing to a goal leads to: refusal to abandon the goal, persistence in pursuing the goal, and the resolve to sustain the effort required to achieve the goal (Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001b; Latham & Locke, 1991; Oettingen, Pak, & Schnetter, 2001).

Goal commitment can both be impacted by goal attributes as well as affect subsequent goal pursuit performance. Goal attributes that can impact commitment include: goal

attractiveness (i.e. how appealing is the outcome), goal importance, and one's confidence that one's actions will result in attaining the goal (Latham & Locke, 1991; Morisano & Locke, 2012).

Commitment can both impact goal pursuit performance directly as well as act as a moderator. In the direct impact view, there will be a significant difference in effort made by someone with high goal commitment versus low goal commitment in striving toward a goal. For difficult goals, those with high goal commitment are likely to make more of an effort, whereas those with low goal commitment are likely to put little effort toward attaining a goal they don't care about. For easy goals, those with low commitment are likely to make more of an effort in order to give themselves a sense of accomplishment; where high commitment individuals are likely to be discouraged by a goal requiring less effort than they're willing to put in (i.e. too easy, not worth the effort; Latham & Locke, 1991). In the moderator view, goal performance is moderated by commitment, with high commitment acting as a stronger predictor of performance.

Given the importance of goal setting in academic achievement, and the moderating role that goal commitment has on performance, this study will measure goal commitment as a key dependent variable. But how do you measure goal commitment?

How to measure goal commitment. While the relationship between goal commitment and performance was being evaluated, a separate thread of research was examining how best to measure the complex construct of goal commitment. Even in contemporary research, goal commitment is frequently measured using a single direct question, typically focusing just on the importance component of goal commitment (see example Klein et al., 2001a; Oettingen, Mayer, & Brinkmann, 2010). Goal commitment is a complex construct. The most comprehensive measure includes questions about the perceived importance the goal is for individual, how worthwhile obtaining the goal is for the individual, and willingness of the individual to put in

effort (Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001a; Klein et al., 2001b). Hollenbeck et al. (2001b) developed the first Goal Commitment scale, which, after refinement emerged as a 5-item scale. The scale has been shown to be robust and unidimensional, and is valid for the measurement of either assigned or self-selected goals. The scale can also handle varying levels of goal complexity, and can be measured prior, during or after goal pursuit is initiated (Klein et al., 2001a, 2001b).

As noted above, goal commitment is a complex construct, and is vulnerable to a number of internal and external factors, including perceived ability to perform the goal-directed behaviour, and whether that behaviour will result in successful attainment of the identified goal. One way to consider an individual's perception of ability is to consider the construct of Hope.

Hope

High levels of hope are associated with high grades and academic achievement; and low levels of hope are associated with lower grades, more test-taking anxiety, maladaptive study strategies and coping strategies (see summary Alexander & Onwuegbuzie, 2007). Students with low hope have been shown to employ more avoidance coping strategies in response to stress than their high-hope counterparts (Alexander & Onwuegbuzie, 2007). When hope is considered as a single construct, it can be a strong predictor of academic achievement beyond personality, intelligence, and prior academic record (see summary in Davidson, Feldman, & Margalit, 2012).

Hope is typically studied through the lens of goal-directed behaviour, and in Snyder's Hope Theory, is a complex construct involving two components that combine and are focused towards goal-directed behaviour (Snyder et al., 2000). The first component is *Pathways Thinking*, which is the belief that one can generate and organize appropriate behaviours that are necessary and will positively contribute to the pursuit of an identified goal (Snyder, 2002; Tong,

Fredrickson, Chang, & Lim, 2010). The second component of hope is *Agency Thinking*, which is the belief that one can perform the appropriate behaviours as one proceeds along the identified pathways in pursuit of a given goal (Snyder, 2002; Tong et al., 2010). An individual uses agency thinking to channel positive motivation in the direction of new pathways of goal pursuit.

Snyder's theory suggests that agency and pathways thinking work together both iteratively and additively to comprise hope, and that increases in one will cause an increase in the other (Snyder et al., 2000). The belief that one can perform the required behaviours (agency thinking) influences the belief that one can generate appropriate plans (pathways thinking), which should further motivate goal commitment and sustain goal pursuit. Indication for this influence may be in goal setting theory, which –while not explicitly stated as hope– lists ability and beliefs in ability as key moderators of goal-performance relationship (Latham & Locke, 1991).

How to measure hope. Hope theory researchers are most interested in hope that relates to goals that are of intermediate difficulty and moderate importance. If the goal is too difficult, there is too much negative affect overriding hope measures; if the goal is too certain or not important enough, hope will not spark the positive motivation to encourage the individual toward her chosen goal (Snyder et al., 2000).

While hope is constructed of the two components of pathways and agency thinking, they are each a distinct component, and can therefore be measured separately. Furthermore, according to Snyder's hope theory, there are two ways that hope can be measured: by considering either an individual's dispositional level of hope, or their level of hope in relation to a specific situation. Snyder developed two scales to measure each view of hope respectively, the Hope Scale for disposition hope (henceforth referred to as Trait Hope Scale), and the State Hope Scale to

measure hope related to a specific situation (Babyak, Snyder, & Yoshinobu, 1993; Hellman, Pittman, & Munoz, 2012). Each scale follows Snyder's theory and has items that separately measure agency and pathways thinking.

While dispositional hope will remain relatively constant, researchers have begun to test whether hope can be manipulated in certain situations. Following interventions designed to increase ratings of hope in students, researchers found increases in hope scale scores; more progress toward an identified goal (Feldman & Dreher, 2011); an increase in mean grades (Davidson et al., 2012); and even higher ratings of pain tolerance when participants submerged their hand in a bucket of ice water (Berg, Snyder, & Hamilton, 2008).

In the Feldman & Dreher (2011) study, further analysis showed that the experiment's intervention resulted in a change in both pathways and agency thinking, and that the combination of agency and pathways measurements provided a better predictor of progress than either measure alone. These results differed from previous studies which have historically shown that agency alone was a better predictor of progress than either pathways alone or when agency and pathway were combined (see summary Feldman & Dreher, 2011).

While this study will focus on the cognitive construct of hope and it's the subcomponent of agency thinking, it is worth noting that Snyder's hope theory is often considered cognitively similar to Bandura's self-efficacy theory (Latham & Locke, 1991), and for good reason.

Hope vs. Self-Efficacy

Self-efficacy involves an individual's belief that she has, within herself, the ability to perform the behaviours required to achieve a goal (Wood & Locke, 1987; Zimmerman et al., 1992). Both hope and self-efficacy theories stipulate that goal-directed behaviour is important and worthy of an individual's persistent attention, and both evaluate whether goal-directed

behaviour will produce a desired result (outcome expectancy in Bandura's model, pathways thinking in Snyder's model). Further, both predict that an individual would assess her capacity to perform the required behaviour (efficacy expectations in Bandura's model, agency thinking in Snyder's model) (Snyder et al., 2000).

The two theories differ in that Bandura's self-expectancy theory is situation specific, whereas Snyder's hope theory includes a dispositional feature that can predict variance that is independent of self-efficacy measures (Snyder et al., 2000). As noted above, hope can be high in situations where an individual believes a goal can be attained even when the behaviours are outside her control (Tong et al., 2010). Finally, where self-efficacy emphasizes the expectation that one can perform appropriate goal-directed behaviours, hope includes additional cognitive elements of planning (pathways) and motivation (agency). This means that in order to understand hope, one would also consider the consequences of pursuing and attaining selected goals (Feldman, Rand, & Kahle-Wroblewski, 2009).

Self-efficacy has been shown to relate to academic performance (ranging from $r = .27$ to $r = .54$; Wood & Locke, 1987). It has an average effect size (d) of .35 on scholastic achievement (Davidson et al., 2012). Zimmerman et al. (1992) found that while prior grades had a correlation to academic goals of $r = .23$, the correlation increased to $r = .56$ when prior grades were combined with self-efficacy ratings. Students often employ specific strategies to monitor their progress and to support their goal pursuit; and these strategies can also be influenced by self-efficacy. The present study will look at self-regulation strategies that are common among students, and how a specific strategy called mental contrasting interacts with a student's existing levels of hope.

Self-Regulation Strategies

Self-regulation strategies are activities an individual purposefully takes that aid in progress towards a desired goal (Vohs & Schmeichel, 2002). These activities can encompass setting personal benchmarks of success, marshaling the energy to engage in goal-directed action, monitoring progress using those benchmarks, and making adjustments appropriate to the pursuit of those goals (Zimmerman & Bandura, 1994). Self-regulation can also be considered an internal psychological process or a resource that monitors both behaviours that are goal-directed and urges that may be goal-hindering, and, using the internal incentive of goal achievement, directs attention and behaviours back to the desired outcome (Latham & Locke, 1991; Vohs & Schmeichel, 2002). From the resource view, self-regulation can be depleted such that when regulatory effort has been exerted on an initial task (e.g. suppressing emotion), performance is impaired in subsequent tasks (e.g. refraining from eating high calorie foods; Vohs & Schmeichel, 2002).

Self-regulation is important for students' success. For many students, university is their first experience away from home, and they must learn how to juggle classes, schoolwork, spending time with friends, and regular chores. Those students who lack effective self-regulation strategies will fall behind in schoolwork, scramble to finish essays, or run out of clean clothes. Focusing on academics, grades in writing courses and social studies can be predicted by measuring students' perceived ability to perform the behaviours required for a self-regulation strategy (Zimmerman et al., 1992; Zimmerman & Bandura, 1994).

It is worth noting that the use of self-regulation strategies is implied throughout goal setting theory (Latham & Locke, 1991), beginning with the observation that the process of setting a goal is itself an act of identifying a discrepancy between a current and future state.

Further, as with the activities encompassed in self-regulation, the goal itself defines a benchmark of success, and when a person commits to a goal, she agrees within herself to monitor her urges and focus her behaviour on goal attainment (Latham & Locke, 1991). Finally, when individuals set goals they believe they have a chance of achieving, they have been found to spontaneously formulate appropriate plans, tactics, and self-regulation strategies that will aid them in the pursuit of their goals (Latham & Locke, 1991; Sevincer & Oettingen, 2013). While there are many strategies that are available for an individual to select from, this study will focus on a specific self-regulation strategy called Mental Contrasting.

Mental Contrasting.

Mental Contrasting is a self-regulation strategy that involves identifying a goal (such as completing an essay two days before it is due), then identifying possible positive outcomes (being relaxed, having time to review and make edits), then identifying current obstacles that stand in the way of achieving those outcomes (having only just begun the first paragraph; Johannessen, Oettingen, & Mayer, 2012; Kappes, Wendt, Reinelt, & Oettingen, 2013; Oettingen et al., 2001; Oettingen, Stephens, Mayer, & Brinkmann, 2010). In order to engage successfully in a mental contrasting activity, however, it is important to conduct all three parts of the activity in the order specified (Kappes, Singmann, & Oettingen, 2012). Through the act of mental contrasting, both the desired future and present reality are made concurrently available. This creates both a strong relationship between present and future, as well as the cognitive discrepancy between the two, which was mentioned in the above-noted goal setting theory.

Mental contrasting as a self-regulation strategy is sensitive to an individual's feelings of efficacy. For an individual with a low sense of efficacy (i.e. if they do not feel capable of performing the behaviour required to achieve the goal, or they think that the behaviour is

unlikely to achieve the goal) this cognitive discrepancy will make salient the challenges she faces and is likely to cause her to disengage from pursuing the goal, or delay pursuit of the goal (M. Adriaanse, De Ridder, & Voorneman, 2013; Oettingen & Gollwitzer, 2002; Oettingen, Mayer, & Thorpe, 2010; Oettingen et al., 2001). For someone with a high sense of efficacy, mental contrasting uses the same discrepancy/salience process to energize and inspire the individual to realize that she is capable of performing the required behaviour, and that behaviour would likely result in successful attainment of the goal (M. Adriaanse et al., 2013; Johannessen et al., 2012; Oettingen et al., 2001). Mental contrasting has been shown to increase goal commitment in high-efficacy individuals, and decrease goal commitment in low-efficacy individuals in studies involving dieting wishes, eating fruits and vegetables, diabetes self-care, and quitting smoking (M. Adriaanse et al., 2013; Johannessen et al., 2012; Oettingen, Mayer, & Thorpe, 2010; Stadler, Oettingen, & Gollwitzer, 2010).

The use of a mental contrasting strategy has been shown to predict goal commitment for self-identified academic goals that is in the direction of the pre-existing self-efficacy (Sevincer & Oettingen, 2013). In other words, while an individual with high levels of self-efficacy for an academic goal is likely to have high levels of goal commitment, she is likely to have even higher levels of goal commitment following a mental contrasting exercise. Conversely, an individual with low levels of self-efficacy for an academic goal is likely to further decrease her goal commitment following a mental contrasting exercise.

While some studies have measured the effort put in toward achieving a goal, typically studies involving mental contrasting measure participants' goal commitment as the outcome variable (Johannessen et al., 2012; Oettingen, Mayer, & Thorpe, 2010; Oettingen et al., 2009). In focusing on this commitment variable, researchers have been able to show that mental

contrasting does not impact an individual's sense of self-efficacy attitudes towards goal achievement (Oettingen & Stephens, 2009). Further, it has not been shown to impact incentive value of the goal (Oettingen & Stephens, 2009). Instead, mental contrasting uses existing attitudes to increase or decrease goal commitment and goal striving in line with pre-existing efficacy ratings (Oettingen & Stephens, 2009).

Mechanisms of Mental Contrasting.

Energizing. The first mechanism of mental contrasting is that it has an energizing effect on an individual's commitment to goals. The commitment to challenging but realistic goals acts as a motivator or energizer that individuals draw on in their goal pursuit (Locke & Latham, 2002). Mental contrasting exercises have been shown to have an additional energizing effect on goals, and can further impact commitment toward a goal in an expectancy-dependent direction (i.e. applying a mental contrasting activity to a high-efficacy goal will further increase goal commitment). Researchers used systolic blood pressure measurement as a reliable indicator of arousal and effort recruitment. They observed an increase in systolic blood pressure while participants engaged in a mental contrasting exercise relating to a high-efficacy goal, which in turn predicted an increase in goal commitment (Oettingen et al., 2009). While not yet explicitly studied, researchers have found promising evidence that indicates the energizing effect of engaging in a mental contrasting exercise for high-efficacy goals may strengthen one's self-regulation "reserves"; and this resource could in turn be applied to unrelated tasks (Oettingen & Stephens, 2009).

Obstacle identification. The second mechanism of mental contrasting is a cognitive process of obstacle identification, which looks remarkably similar to the problem solving heuristic of means-end analysis. Both processes require identification of a desired goal state,

identification of the current state, and when both states are made salient, an individual is able to evaluate the differences between these two states (Novick & Bassok, 2005; Oettingen & Stephens, 2009). In a mental contrasting exercise, the information about the difference between the two states could be considered obstacle identification, and an individual can then determine whether these obstacles could reasonably be overcome.

Planning. The final mechanism of mental contrasting is another cognitive process (Oettingen & Stephens, 2009). It is important to note that unlike the means-end heuristic, through which an individual would identify and plan the specific required behaviours to pursue a goal, a mental contrasting exercise does not formally contain these specific planning behaviours. Instead, research has shown that identifying specific required behaviours occurs spontaneously in high efficacy individuals (Kappes et al., 2012; Sevincer & Oettingen, 2013). Further, those individuals will then plan these behaviours in a way that is particularly effective at attaining the identified goal.

Returning to the essay example, when a student engages in a mental contrasting exercise, her desired future of finishing an essay on time is contrasted with the reality of her current situation. For a student with an already-high sense of self-efficacy (meaning she is already confident in her ability to accomplish her goal), the mental contrasting exercise will make salient the differences between current and future state. She will use her self-efficacy to interpret the gap as something she can overcome and she will be inspired to spontaneously plan the appropriate behaviours to accomplish the goal. These behaviours may include silencing her phone, putting in earplugs, or turning off access to the internet. For an individual with a low sense of efficacy relating to the goal, the reality that she has only two days to write 20 pages may cause her to realize the impossibility of achieving that task, and she may further delay beginning

her essay by going out with friends.

To review, individuals – when engaging in a mental contrasting activity – draw on their existing levels of efficacy, and use their efficacy to motivate themselves to identify more obstacles in their current state. Those with high efficacy will spontaneously generate effective plans to overcome those existing obstacles. These plans in turn result in an increase in commitment toward their identified goal. Moreover, while mental contrasting has been reliably shown to influence goal commitment in the direction of prior self-efficacy (high or low), use of this self-regulation strategy has not been shown to change existing efficacy attitudes.

Present Study

While Oettingen and her fellow researchers studied the relationship between efficacy and self-regulation, Vohs and her fellow researchers considered the relationship between hope and self-regulation with respect to goal commitment and pursuit. Vohs et al. found that people with high hope also had strong self-control abilities, and could effectively use appropriate self-regulation strategies (Vohs & Schmeichel, 2002). Further, her descriptions of the self-regulation strategy her participants used and, of the consequences of the strategy, sound remarkably similar to mental contrasting: "... hopeful thinking is characterized by appropriate self-regulation, which includes seeking out honest and accurate feedback, subsequently altering behaviour patterns in response to the feedback, and changing or stopping goal pursuit when conditions indicate that the goal has become less important or inappropriate" (Vohs & Schmeichel, 2002, p. 318).

In pulling this all together, there are many components to consider. First, the self-regulation exercise of mental contrasting has been shown to impact goal commitment in the direction of pre-existing efficacy. Next, mental contrasting exercises have also been shown not to impact efficacy attitudes, but rather use these existing attitudes to energize (or demotivate)

participants further and increase (or decrease) their goal commitment. This energizing effect occurs by the action of identifying desired outcomes then identifying current reality, which in turn causes spontaneous planning behaviour. Adding to this, efficacy is argued to be cognitively similar to hope, in that both cause individuals to consider their ability to produce a goal-directed behaviour, and the likelihood that their directed behaviour would result in successful attainment of the desired goal. Given these connections, it was inevitable that researchers would begin to look at the relationship between hope and mental contrasting and their combined impact on goal commitment.

Oettingen & Gollwitzer (2002) examined these very relationships. They predicted that the self-regulation strategy of mental contrasting might use the agency-thinking component of hope in goal selection and goal striving. Their model involved three components, beginning with the proposition that that when undertaking a mental contrasting exercise, individuals would use their existing agency hope in the same way they have been shown to use their self-efficacy to impact goal commitment. This means that as with efficacy, those with high agency hope are likely to exhibit high goal commitment following a mental contrasting exercise. Next, agency hope thinking would have the same energizing influence as efficacy on obstacle identification and spontaneous planning. Finally, the model proposed that obstacle identification and spontaneous planning would in turn impact goal commitment in the direction of the existing agency hope. Returning once again to the essay example, a student with existing high agency hope thinking, would undertake a mental contrasting exercise that would draw on that existing high agency hope (i.e. belief that she can perform the necessary goal-directed behaviours and those behaviours would result in successful goal attainment) and increase her commitment to attaining her goal of completing her essay on time.

Statement of Hypotheses

The current study will test two hypotheses. First, as with earlier mental contrasting/goal commitment studies we will evaluate each group's goal commitment scores following the treatment exercise. It is predicted that as with the above-noted MC studies, the group who engages in a mental contrasting exercise will produce higher goal commitment scores. All students will be asked to identify high-efficacy goals, so by engaging in the MC activity, students are expected to feel more energized and have a better sense of their required goal-directed activities relative to their control group counterparts.

The second hypothesis is that the exercise will not have an effect on hope (meaning that participants who complete the mental contrasting exercise will score higher on goal commitment than participants in the control group; no change will be detected for agency hope scores). The lack of change in hope scores is predicted because the mental contrasting exercise will use existing levels of hope as a motivating factor; and, this can be seen in the single direction of the arrows in the proposed model (see Figure 2).

Proposed Model

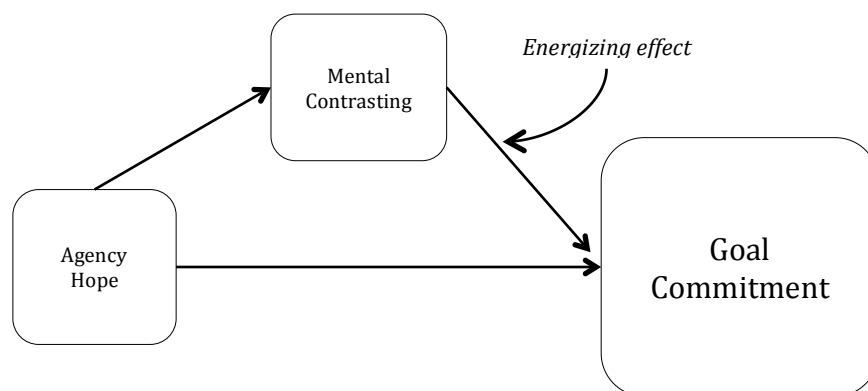


Figure 2. Proposed model of the relation between agency hope and goal commitment with the inclusion of a mental contrasting exercise.

Method

Participants

A total of 99 people participated in this study. The majority of participants were female ($n = 76$, $M = 76.8\%$). Participant age ranged from 18 to 50 years of age ($M = 18.98$, $SD = 3.49$). Participants were drawn from the Western University Psychology participant research pool and registered electronically using the SONA online signup system. All participants were required to be students enrolled at Western, and were required to be comfortable reading and writing in English. Participants were tested individually, and were compensated with a half-hour of class credit for their participation. This study was approved by Western University's Research Ethics board under file number 104613.

Materials

Demographics questionnaire. The demographics questionnaire (Appendix A), asked for their age, gender, program and the number of years of post-secondary schooling completed.

Goal instruction. Participants were given the following written instruction asking them to identify and document an academic goal (Appendix B): "What is currently your most important wish regarding your academics? Please make a wish that you would very much like to fulfill within the next month and that you think you could actually fulfill within the next month". This goal instruction was adapted from Johannessen et al. (2012) by changing the instruction from a dieting wish to an academic goal, and the timeframe from two weeks to one month. The decision to increase the timeframe to one month was to allow for a substantial goal to be set, such as studying for a test or completing a paper. This instruction was chosen in order to replicate earlier studies using mental contrasting exercises as closely as possible.

Trait and State Hope scales. The Trait Hope Scale Questionnaire is also known as the

“Future Scale” (Snyder et al., 1991). The State Hope Scale Questionnaire is also known as the “Goals Scale” (Snyder et al., 1996a, 1996b). These scales will be administered twice; the second administration is necessary in order to evaluate whether their levels of agency hope changed following the treatment exercises. The Trait and State hope scales will be explained further in the measurements section below.

Treatment group exercises. The following activity in the study was the only time there was a different experience between the two treatment groups. The Mental Contrasting group was given a two-stage exercise where they were asked first to consider and then to document a positive consequence associated with fulfilling their academic goal (Appendix C). The language was also adapted from Johannessen et al. (2012) by changing from a dieting wish to academics. For the second step, participants were asked to consider and then document a current personal obstacle that would prevent them from fulfilling their wish (Appendix D).

The Control group was also given a two-step exercise. This exercise was designed to provide the control group with an activity that would create a similar cognitive load, would require a similar amount of effort, and would last approximately the same duration as the Mental Contrasting exercise. This exercise was also designed to avoid possible confounds such as giving the control group any sense of accomplishment or failure that a traditional distractor task such as puzzle solving might offer. For the first step, participants in the control group were asked to consider and then document their prior summer activities. This was an original script (Appendix E). In the second step, control group participants were then asked to consider and document a specific day in the summer that stood out for them. Again, this was an original script (Appendix F).

Goal Commitment Scale (Klein et al., 2001a). This scale will be explained further in the

measurements section below.

Procedure

Participants were randomly assigned to either the Mental Contrasting Condition or the Control condition using the Research Randomizer website random number generator (Urbanik, 2013). Upon arriving at the lab, participants were met by the experimenter, were given a pen and a package of test instruments to complete, and were seated alone in a room. Participants were instructed not to flip back through completed pages, and were advised the study would take about 30 minutes to complete. The package contained the following components, and each component will be discussed below: the Letter of Information and Consent form (Appendix G), the Demographics questionnaire, the goal instruction, the State and Trait Hope scales, MC or Control exercise instruction (appropriate to their assigned treatment group), the State and Trait Hope scales (second administration), and a Goal Commitment Scale. Upon completion of the package, the participant returned the package to the experimenter, was provided with a debriefing form (Appendix H), was invited to ask questions and was thanked for their time.

Measurements

Goal Commitment scale (Klein et al., 2001a). This scale was designed to measure respondents' commitment to a specific goal. Using reliability estimates, this scale has been shown to be reliable regardless of the complexity of the goal, whether it is assigned or self-selected, or at what stage of goal completion it is administered (Klein et al., 2001b). The questionnaire contains five questions, and responses are measured on a five-point Likert-type rating (ranging from 1 (Strongly Agree) to 5 (Strongly Disagree)). Three of the questions are reverse-scored, and the sum of the scores produces a single Goal Commitment score. $\alpha = .74$

Trait Hope scale (Snyder et al., 1991). The Trait Hope scale is designed to measure a

respondent's durable self-rating of hope independent of situation or time (Tong et al., 2010). The questionnaire contains 12 questions. Responses are measured on an eight-point Likert-scale (where 1 is "Definitely False" and 8 is "Definitely True"). The Trait Hope scale contains two subset evaluations, one for agency thinking and one for pathways thinking. An example of a trait agency thinking –or confidence in ability– question is "I meet the goals that I set for myself". The trait agency thinking component is captured by summing the results of a subset of four questions, and has an observed reliability (α) of 0.82 (Snyder et al., 1991). When administered, the Trait Hope Scale Questionnaire is referred to as the "Future Scale".

State Hope scale (Snyder et al., 1996a, 1996b). This scale is designed to measure a respondent's situation-specific rating of hope (Tong et al., 2010). This questionnaire contains six questions. Responses are measured on an eight-point Likert-type rating (where again, 1 is "Definitely False" and 8 is "Definitely True"). The State Hope scale also contains two subset evaluations for agency and pathways thinking. An example of a state agency thinking question is "Right now I see myself as being pretty successful". The state agency thinking subset is captured by summing the results of a subset of three questions, and has an observed reliability (α) of 0.86 (Snyder et al., 1996a). When administered, the State Hope Scale Questionnaire is referred to as the "Goals Scale".

As noted above, the State and Trait Hope scales each have subset evaluations of agency thinking. Those two agency subset scores from the first administration of the Trait and State Hope Scales were added together to produce an Agency Hope (Pre-) score. The agency subset scores from the second administration of the Trait and State Hope Scales were also added together to produce an Agency Hope (Post-) score.

Results

Descriptive Analyses

A total of 99 participants completed this study (Mental Contrasting –Females $n = 40$; Mental Contrasting – Males $n = 12$; Control – Females $n = 36$; Control – Males $n = 11$). The average years of post-secondary education was .59 years. The average age of all participants was $M = 18.98$ ($SD = 3.49$). Approximately 20% of participants were tested in the middle two weeks of December 2013, and the remainder during the month of January 2014.

Goal Commitment

The first hypothesis predicted that there would be an effect of the mental contrasting exercise on goal commitment. Specifically, we predicted that goal commitment scores would be higher for those participants who completed a mental contrasting exercise than those who completed the control exercise. Levene's test showed a significant difference in variances ($F = 7.08, p = .01$), so the degrees of freedom were adjusted from 97 to 92 on the subsequent t -test. The t -test showed a significant difference between mean goal commitment scores, with participants in the control condition ($n = 47, M = 23.43, SD = 1.57$) reporting a significantly greater mean score than those in the mental contrasting condition ($n = 52, M = 22.37, SD = 2.25$); $t(92) = 2.69, p = .01$).

Agency Hope

The second hypothesis predicted there would be no effect of treatment on the agency hope scores. An ANOVA Repeated Measures analysis was conducted, where the between-groups variable was treatment (Treatment: control, mental contrasting), and the within-groups variable was the agency scores from the State and Trait Hope scales conducted before and after the treatment activity (Time: pre-treatment, post treatment). There was a significant main effect

of time within groups ($F(1, 97) = 16.90, p < .0001$), demonstrating that mean scores increased in the second administration of the tests for both groups. The difference between treatment groups fell just short of being significant ($F(1, 97) = 3.40, p = .068$), with the control group scoring higher during both administrations of the hope scale. There was no interaction between treatment and time ($F(1, 97) = 2.01, p = n.s.$).

Table 1

Average Agency Hope Scores Taken Before and After Treatment (with Standard Deviations in Parentheses)

	<u>N</u>	<u>Pre-treatment</u>	<u>Post-treatment</u>
Mental Contrasting	52	40.39 (7.45)	41.17 (7.90)
Control	47	42.60 (6.59)	44.21 (6.76)

Note: Total possible score for Agency Hope was 56.

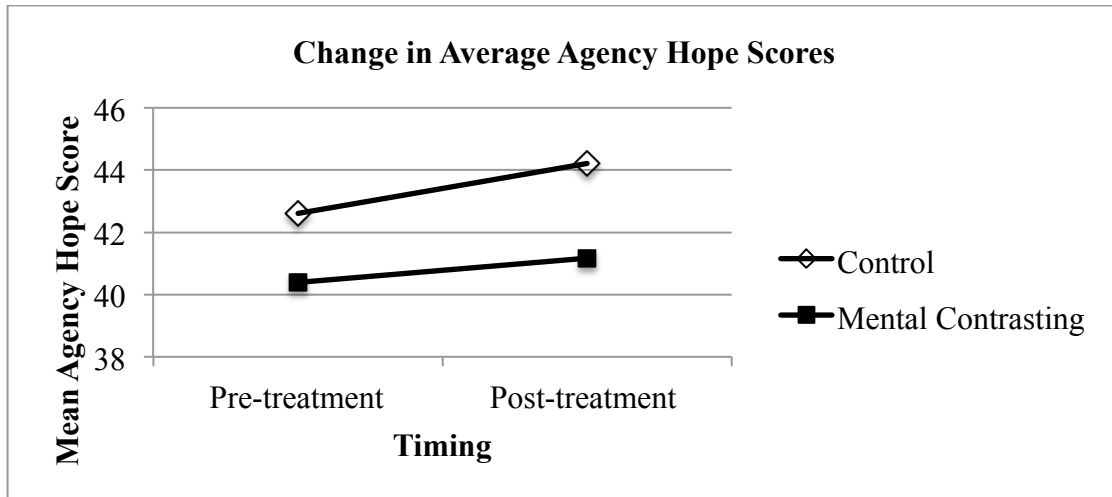


Figure 1. Average Agency Hope Scores. Total possible score for Agency Hope was 56.

Further Analysis

The following correlation table was produced in order to explore the relationship between goal commitment and agency hope scores (Table 2). All correlations were significant.

Table 2

Correlation Matrix for Goal Commitment and Hope Agency Scores					
	1	2	3	4	5
1. GoalCommitment	-				
2. PreTrait_Agency	.307**	-			
3. PostTrait_Agency	.382**	.880**	-		
4. PreState_Agency	.290**	.801**	.722**	-	
5. PostState_Agency	.355**	.834**	.814**	.896**	-

** $p < 0.01$ level (2-tailed).

Upon reviewing the results in relation to the predicted outcomes, we noticed that the control group's mean scores were consistently higher than the mental contrasting group's mean scores on every measurement, including the pre-treatment hope scales. Participants were randomly assigned to the treatment groups, the researcher was blind to the treatment group and the initial hope scales were administered before participants experienced any difference in treatment. In order to determine whether the difference in scores was at a statistically significant level, we conducted a *t*-test on participants' agency hope scores taken before treatment ("Pre-treatment" timing). The *t*-test showed, however, that the difference between the agency hope scores for each group prior to treatment was not significant, with similar variances assumed ($t(97) = 1.56, n.s.$).

Discussion

This study was designed to evaluate the theoretical model put forward by Oettingen and Golwitzer (2002). Their model predicted that a mental contrasting self-regulation strategy would map on to the agency-thinking component of Snyder's hope theory to influence levels of goal

commitment. This study proposed two hypotheses: that when comparing goal commitment scores for control group, scores would be higher in the group who engaged in a MC exercise; and, that agency hope would not be impacted by either treatment exercise. Neither hypothesis was supported in this study. Each hypothesis will first be discussed separately, and then brought together in a subsequent section.

Goal Commitment

The first hypothesis predicted that the mean goal commitment score would be higher for the group who engaged in a mental contrasting exercise relative to the control group. This prediction was in line with earlier studies such as one conducted by Johannessen et al. (2012) which found that engaging in a mental contrasting strategy resulted in greater commitment to healthy behaviours. The results from the present study, however, found an opposite effect; the control group reported a higher mean score than the group who engaged in a mental contrasting exercise. We'll consider three possible reasons for this result.

Mental contrasting and self-efficacy. As noted in the introduction, mental contrasting has been shown to increase goal commitment, but only for goals for which someone already feels a high sense of self-efficacy. When a goal is selected for which one feels a low sense of self-efficacy, the act of mental contrasting makes one aware of the obstacles one would face when striving for the goal, and has been shown to reduce goal commitment (M. A. Adriaanse et al., 2010; Oettingen, Mayer, & Thorpe, 2010; Oettingen et al., 2001). In an effort to create the highest possible level of self-efficacy, participants in this study were instructed to select a goal that was both challenging and achievable. It is possible that some participants may have instead selected goals that they did not feel a high sense of self-efficacy toward, in which case the mental contrasting exercise would have reduced their commitment to their selected goal, thus lowering

the group's mean goal commitment score.

Control exercise and positive affect. Participants in the control exercise were asked to recall the events of their prior summer, and describe in detail their experience of a specific day during that summer. The instructions were worded in a neutral form, and did not require participants to recall a specific day or for the events of the day to meet a certain criterion (such as the best day or the worst day of the summer, merely the first memory that comes to mind). While the control exercise was designed to act as a neutral exercise that matched the MC exercise in cognitive effort and duration, it is possible that they recalled a particularly good day they experienced during that summer. During anecdotal discussions after completion of the study, participants expressed their enjoyment at recalling their summer activities, and that they often recalled either happy memories, or memories of earlier successes.

The memories that were either happy or demonstrated success may have had an unintended positive impact on participant's affect (recalling a happy memory), or may have had an unintended energizing effect on participants in the control group (recalling a successful achievement), both of which may have inspired participants to increase their goal commitment. There are two possible reasons for participants to recall positive memories. First, when someone is asked to recall autobiographical information, she is most likely to recall a memory that is congruent to her current affect (Drace, 2012). The researcher greeted each participant with a smile and pleasant demeanor, which likely put the participant in a positive state of mind, thus increasing the likelihood of mood-congruent memory to be most easily recalled.

Demand characteristics. The second reason for recall of a positive or empowering memory may be due to a demand characteristic of the study (see summary by Bresó, Schaufeli, & Salanova, 2010). Participants may have assumed that the study was predicted to produce a

change in some personal variable, and they may have made an effort to recall an especially meaningful memory to support a change in a personal variable. This demand characteristic will return when reviewing the results of the second hypothesis, relating to agency hope.

Agency Hope

The second hypothesis in this study predicted that the MC and Control exercises would produce no change in agency hope scores. This was in line with the Oettingen and Gollwitzer (2002) model that outlined how people would draw on their existing levels of hope when engaging in a mental contrasting exercise. Their model, however, did not predict that the MC exercise would have an effect on hope scores, but rather (much like self-efficacy) that people draw on their existing levels of hope as they engage on their mental contrasting exercise. The results from this study showed a significant increase in agency hope scores during the second administration of the hope scales; an almost-significant difference between treatment groups (with the control group producing higher scores); and no interaction effect between timing and treatment group. There are three possible reasons for these results.

Mental contrasting exercise may have increased hope. The model that this study is evaluating theorized that people use their existing levels of agency hope when engaging in a mental contrasting exercise. This model did not predict that the MC exercise would in turn produce an increase in agency hope, however that may have occurred in this study. In reviewing hope research, Feldman and Dreher (2011) successfully manipulated hope using techniques that appear to be remarkably similar to mental contrasting activities such as the one performed in this study. Feldman and Dreher created a hope intervention technique that included a “goal mapping” exercise whereby students documented a goal, identified obstacles and outlined steps they could take to overcome those obstacles. Participants in the hope intervention group reported

a greater increase in post-intervention hope scores immediately following the intervention and at a one-month follow up.

Control exercise may have increased hope. As noted in the discussion related to goal commitment, participants were likely to have recalled a mood-congruent happy memory, or a memory in which they achieved success. A happy memory may have further elevated their mood, which in turn may have also elevated their agency hope. A memory of success may have reminded them of their ability to accomplish their goals, which also may have caused the elevation in agency hope.

Demand characteristics. All participants attended this study as part of a class requirement to experience studies from a participant's point of view. This likely increased the attention participants paid to the design, and the possible demand characteristics of the study (Bresó et al., 2010). When participants were presented with the same hope scales a second time, they may have assumed the hypothesis predicted a change in hope scores. Participants may have tried to "help" the researcher by recording changes in agency hope scores that were greater than was actually felt.

Correlations

As noted in the Results section, all correlations were significant. Weak-to-moderate positive correlations between goal commitment and each agency hope score indicated that the scales each measured different components, but there was likely a similar underlying construct at play. Not surprisingly, all agency hope scores were very highly correlated, with the strongest relationships appearing between the scales measuring the same component of hope (state or trait) at the two different time points.

Limitations

This study tested a theoretical model that maps the mental contrasting self-regulation strategy on to the agency-thinking component of Snyder's Hope Theory. The present study pulled elements from existing mental contrasting research such as goal and exercise instructions, and added new elements in the form of existing well-established measurement tools such as the Goal Commitment and Hope scales. There were, however, some limitations to this study design, as well as some future opportunities. Beginning with the limitations to the study, these will cover variability in goal setting, activity instructions, measurements, data analysis, and demand characteristics.

Variability in goal setting. Goal setting research has found that commitment is highest for goals that are perceived as both challenging and realistic (Locke & Latham, 2002). This combination is understood to simultaneously energize goal directed behaviour because the goal will require work to attain (challenging), but also provide the highest sense of self-efficacy that with effort, one could (realistically) obtain that goal. This high sense of self-efficacy is necessary as earlier-noted studies found that mental contrasting exercises increase goal commitment only for those goals where one already feels a high sense of self-efficacy. It was decided to direct participants to set only high self-efficacy goals as this study was testing whether mental contrasting had an effect on agency hope, rather than correlation between the two.

The goal setting instruction was adapted from an earlier study by Johannessen et al. (2012), and was written to elicit a high level of goal commitment. Despite the careful wording, however, it is possible that participants ignored the instructions and set goals that produced more variability in perceived self-efficacy. Earlier studies found that goal commitment was impacted by mental contrasting exercises in the direction of pre-existing self-efficacy (M. A. Adriaanse et

al., 2010).

Additionally, those participants who participated in this study for credit toward their Introductory Psychology class may have felt lower self-efficacy toward their goal (typically written as “I’d like to get 80% on the Psych 1000 exam”). This would be due to increased anxiety occurring naturally immediately prior to their exam (December) or feelings of helplessness experienced immediately after receiving their mark (January), which on average decreased by 6% from the mid-term (personal communication, Dr. Mike Atkinson, April 4, 2014).

Returning to the impact of self-efficacy on goal commitment scores for the mental contrasting group, this variability in self-efficacy may have also lead to more variability in goal commitment scores for the mental contrasting group, thus lowering the group’s overall mean scores. Creating a rubric and evaluating the participants’ identified goals could be correlated with goal commitment scores, which might uncover those relationships. Further, an evaluation of the goals that were set may also help uncover previously unexplored relationships between the type of goals that were set and mental contrasting activities.

Activity instructions. The MC exercise was adapted from an earlier study (Johannessen et al., 2012), but the control exercise was an original script. The control exercise was designed to require a similar level of cognitive effort and duration as the MC exercise, yet it was intended to remain a neutral exercise, neither impacting hope nor goal commitment. As the results showed, however, the control exercise produced an unexpected significant increase in both goal commitment and agency hope. An earlier discussion identified possible reasons for this, including an increase in positive affect or self-efficacy. Further research could include a replication of this study that replaced the control exercise with a different, well-established

“control” protocol.

Goal commitment measurement. Although the tested model theorized the relationship between mental contrasting and Snyder’s agency thinking component of hope, the two research threads had never previously been combined. Further, while the mental contrasting research thread used goal commitment as a key dependent variable, a robust goal commitment scale had never been used, in favour of an ad-hoc, single question of commitment. It is possible that the MC research may conceptualize the goal commitment construct in a way that is entirely different than the leading goal commitment theorists (Locke, Latham, Klein, Hollenbeck). A subsequent study using an earlier MC protocol could be designed that replaced the ad-hoc goal commitment measure with the scale used in this study (Hollenbeck, Klein, O’Leary, & Wright, 1989). Replicating the protocol of an earlier study but using a new goal commitment measure would ensure that Hollenbeck et al.’s goal commitment scale was an appropriate tool to use when evaluating mental contrasting, goal commitment and agency hope theory.

Continuing the focus on the goal commitment scale, the study set out to measure the difference in goal commitment between the two treatment groups. The results showed an unexpected difference –namely that the control group produced a higher mean score, and the discussion speculated that could be at least partly due to the variability of the mental contrasting exercise. A further study could look at the impact of the MC and control exercises on goal commitment by using the scale both before and after the treatment exercises and measuring the change.

Data analysis. Participants were required to document both their goal and their responses to the MC and control exercises. While the researcher collected the participants written data, it was not included in the analysis. An earlier section noted the value of conducting a follow-up

study qualitatively evaluating participants' initial goals. Adding to that, the follow-up study may also qualitatively evaluate the responses to the treatment exercises for a range of topics, including instruction compliance, relevance to set goal, level of detail, or for any indications of change in self-efficacy or agency hope.

Study protocol. As noted in an earlier section, it is possible that participants considered possible demand characteristics of the study. They may have assumed the study hypothesis predicted that there would be a change in hope ratings, and may have been “helpful participants” by indicating a change greater than was actually felt. Additionally, the entire protocol was completed at one time, lasting between 15 and 30 minutes, with participants working at their own pace, typically completing the documents in quick succession. If a pause were built in to the protocol, either involving a distractor task or requiring them to quietly contemplate their responses, enough time may have lapsed to make it unlikely they would remember their prior responses, thus reducing a practice effect.

Finally, participants completed their experiment package individually, and returned the package to the researcher. While they were not aware that their written responses were not being evaluated as part of the current study, and steps were taken to ensure their anonymity, participants they may still have provided more socially desirable responses than they truly felt. A future study might have participants submit their consent forms prior to receiving the package, and/or having them leave their completed responses to a locked box.

Future research opportunities. The future research directions noted above are intended primarily to overcome potential weaknesses of this study. There are also three additional ways this existing research can be extended. First, would be to add a follow-up element to this study to measure goal pursuit or goal attainment. As noted in the introductory section, setting goals is

one of the strongest predictors of student success (Diseth & Kobbeltvedt, 2010); and while goal commitment is a strong predictor of goal achievement, goal pursuit is still vulnerable to external factors. A follow up study may identify whether one (or both) of the treatment exercises could predict a relationship between goal commitment and goal achievement. Anecdotal observation showed that a vast majority of goals involved obtaining a specific grade in a specific class, and one way to measure goal attainment would be to correlate goal commitment scores with participants' final grades.

A second avenue of research may involve analyzing the existing data on hope in a different way. As noted in the introduction, hope is comprised of two components, agency thinking ("I think I can do this") and pathways thinking ("I think I can see the way through this"). Hope can also be measured at the trait level (ones' enduring level of hope) or at the state level (one's level of hope for a given situation). This study focused on the agency thinking subcomponent of hope, and used a combination of the state and trait evaluations to measure the difference in hope. A researcher could separate the various sub-scale results and conduct a series of new analyses. Assuming that trait agency is an enduring quality, one could perform an ANOVA analysis using only the state agency scores, to see if the pattern of significant pre-post and near-significant control group results held up. Alternatively, a series of *t*-tests could confirm whether the control and mental contrasting exercises impacted the state or trait agency hope sub-scales or both.

One of the key components to this experiment argued that self-efficacy and hope were cognitively similar to one another. While this similarity makes intuitive sense, it does still need to be tested. One way to do so would be to add a self-efficacy measure such as the New General Self-efficacy Scale (Chen, Gully, & Eden, 2001). This measure may help researchers determine

whether agency hope is not only cognitively similar, but also plays a similar role in goal commitment as self-efficacy is understood to have.

Conclusion

The present study set out to test the theoretical model put forward by Oettingen and Gollwitzer (2002) which proposed that a mental contrasting exercise could impact goal commitment by drawing on existing agency hope. The study proposed two hypotheses. The first predicted that as with earlier MC research, the MC exercise (set a goal, imagine a positive outcome, think of a current obstacle) would produce greater goal commitment than the control exercise – because the MC exercise would encourage participants to spontaneously generate plans to overcome the obstacles they identified in order to achieve the positive outcome. The results from this study did not support that hypothesis, but rather showed that the control exercise resulted in higher goal commitment scores. Further research will uncover the relationships between goal commitment and each of the treatment exercises.

The second hypothesis predicted that neither the MC nor the control exercise would produce a change in agency hope. This prediction originated from the cognitive similarity between agency hope and self-efficacy, and how people use existing self-efficacy when engaging in MC activities. As with the first hypothesis, the results did not support this prediction. Agency hope increased for both groups, with the control group achieving an almost-significant change over the MC group. This result supports the growing body of evidence that hope is malleable, and that not only does MC draw on self-efficacy (and possibly also agency hope), it likely also impacts those same constructs.

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Appendix A

Demographics Questionnaire

Selecting and Striving for Academic Achievement

Demographics

Please complete the following questions.

1) What is your age:

2) What program are you in at Western

3) How many years of post-secondary schooling have you completed:

4) What is your gender:

Appendix B
Goal Setting Instruction

Selecting and Striving for Academic Achievement

Setting a Goal

What is currently your most important wish regarding your academics? Please make a wish that you would very much like to fulfill within the next month and that you think you could actually fulfill within the next month.

Appendix C

Mental Contrasting Exercise Part 1

Selecting and Striving for Academic Achievement

Exercise 1

Please write down on the lines below a positive aspect that you associate with fulfilling your currently most important wish regarding academics. What would be the most positive thing about fulfilling that wish? Now really think about this positive aspect. Imagine the relevant events and experiences as vividly as possible! Let your mind go! Do not hesitate to give your fantasies free reign. Take as much time and space as you need to write down what you are thinking. If you need more space to write, please use the back of the page.

Appendix D

Mental Contrasting Exercise Part 2

Selecting and Striving for Academic Achievement

Exercise 2

Sometimes things do not work out as well as we would have liked. What stands in the way of your academics wish being fulfilled? What is it in you that could prevent your wish from coming true? Think about it and write down your personal obstacle that might hinder you to fulfill your wish. Now really think about this obstacle. Imagine the relevant events and experiences as vividly as possible! Let your mind go! Do not hesitate to give your fantasies free reign. Take as much time and space as you need to write down what you are thinking. If you need more space to write, please use the back of the page.

Appendix E
Control Exercise Part 1

Selecting and Striving for Academic Achievement

Exercise 1

Please write down on the lines below how you spent your summer. Be sure to include where you lived, whether you worked, attended classes or traveled. Did you spend time with friends or family? Now really think about this. Imagine the relevant events and experiences as vividly as possible! Let your mind go! Do not hesitate to give your memories free reign. Take as much time and space as you need to write down what you are thinking. If you need more space to write, please use the back of the page.

Appendix F

Control Exercise Part 2

Selecting and Striving for Academic Achievement

Exercise 2

Please write a page describing one day of your summer. Pick the first day that comes to mind. Where were you? What did you do? What was it about this day that stands out? Now really think about this. Imagine the relevant events and experiences as vividly as possible! Let your mind go! Do not hesitate to give your memories free reign. Take as much time and space as you need to write down what you are thinking. If you need more space to write, please use the back of the page.

Appendix G

Letter of Information



Psychology

Project Title: Setting and Striving for Academic Goals

Principal Investigator:

Dr. Patrick Brown, Psychology, Western University
Angie Allan, Psychology, Western University

Letter of Information

1. Invitation to Participate

You are being invited to participate in this research study about how students select and strive for academic goals because you have indicated that you are either a full or part time student at Western University, and are comfortable reading and writing in English.

2. Purpose of the Letter

The purpose of this letter is to provide you with information required for you to make an informed decision regarding participation in this research.

3. Purpose of this Study

The purpose of this study is to learn about how students select and strive for academic goals.

4. Inclusion Criteria

Individuals who are a) either full or part time students at Western University; and b) are comfortable reading and writing in English are eligible to participate in this study.

5. Exclusion Criteria

Individuals who are not full or part time students at Western University and are not comfortable reading and writing in English are not eligible to participate in this study.

6. Study Procedures

If you agree to participate, you will be asked to identify a challenging but achievable academic goal, conduct an accompanying written exercise, and complete four brief questionnaires. It is anticipated that the entire task will take less than 30 minutes, and will be just one session. The task(s) will be conducted in the researcher's office. There will be a total of 80 participants in this study.

7. Possible Risks and Harms

There are no known or anticipated risks or discomforts associated with participating in this study.

Appendix G (continued)

Psychology

8. Possible Benefits

You may not directly benefit from participating in this study, but information gathered might provide benefits to society as a whole; which may include helping researchers gain an understanding of how students select and strive for academic goals.

9. Compensation

Students will receive ½ research credit for up to 30 minutes of participation.

10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future academic status, and you will still receive your research credit.

11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. If the results are published, your name will not be used. If you choose to withdraw from this study, your data will be removed from our database and destroyed. Representatives of The University of Western Ontario Health Sciences Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

12. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact Dr. Patrick Brown at brown5@uwo.ca or Angie Allan at aallan26@uwo.ca.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics (519) 661-3036, email: ethics@uwo.ca.

13. Publication

If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Angie Allan at aallan26@uwo.ca.

14. Consent

Please refer the next page for information regarding your consent.

This letter is yours to keep for future reference.

Appendix G (continued)



Psychology

Consent Form

Project Title: Setting and Striving for Academic Goals

Study Investigator's Name:

Dr. Patrick Brown, Department of Psychology, Western University
Angie Allan, Department of Psychology, Western University

I have read the Letter of Information, have had the nature of the study explained to me, and I agree to participate. All questions have been answered to my satisfaction.

Participant's Name (please print): _____

Participant's Signature: _____

Date: _____

Person Obtaining Informed Consent (please print): _____

Signature: _____

Date: _____

Appendix H

Debrief



Psychology

Setting and Striving for Academic Goals - Debrief

Researchers:

Dr. Patrick Brown, Psychology, Western University
Angie Allan, Psychology, Western University

Selecting and striving for challenging goals are an important part of academic success here at Western. Previous research has shown what naturally makes sense: people with a high sense of hope also are more likely to put more effort in to achieve their goals (Feldman, Rand, & Kahle-Wroblewski, 2009). Striving for your goal takes effort though, and it is important to select the right self-regulation strategy to help you work toward that goal. But how do feelings of hope and selecting a self-regulation strategy relate to one another, and what impact do they have on goal commitment?

In this study, we are looking at two components of goal selection and striving: the relationship between goal commitment and a specific component of hope called agency hope. We are also looking at the impact that the use of a specific self-regulation strategy called mental contrasting has on each of agency hope and goal commitment.

When we study hope we look at two components: Agency and Pathways thinking. Agency thinking causes people to say "I think I can", and Pathways thinking causes people to say "I can see how to do this" (Snyder, 2002). We asked you to identify a challenging but achievable academic goal that we expected would cause you to report high agency hope thinking. Once that goal was selected, some of you were asked to complete a self-regulation exercise called mental contrasting, where you identified a positive outcome of this goal, then considered an obstacle in your current reality that could prevent you from achieving that outcome (Oettingen & Gollwitzer, 2002).

Our study contained two hypotheses:

1. That there would be a positive correlation between goal commitment and hope agency (meaning people who scored high on the goal commitment scale would also score high on the hope agency scale).
2. That there will be an effect of the mental contrasting exercise on goal commitment but not on hope scale scores. For goal commitment, participants who complete the mental contrasting exercise will score higher than participants in the control group. No such effect will be found for hope scale scores.

Thank you for participating in our research. If you would like any further information you can contact Angie Allan, in the Department of Psychology at Western University aallan26@uwo.ca. If you would like to read more about this research, the following references may be helpful to you.

Appendix H (continued)

Psychology

References

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