

Who Gets You Going and Who Keeps You Going:
Motivational Relevance Determines Role Model Effectiveness

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

Role models are ubiquitous: They boost gym-goers' motivation, encourage women to enter science-related fields, or even nudge people to eat the "right" kind of cereal. The present research provides an organizing framework to answer the question of *when* a role model is most motivating. Incorporating insights from both role model and goal stage research, I propose that it is critical to understand the fit between how a role model describes his or her accomplishments and an audience's motivational focus. I first show that people in the beginning stages of their long-term goals are most focused on information about whether or not they have the ability to attain the goal (i.e., expectancy information). In contrast, I propose that people who are maintaining a goal are most focused on information about the importance of goal pursuit (i.e., value information). Further, across 5 studies I show that framing an identical role model's actions in expectancy versus value terms differentially impacts people's motivation as a function of their goal stage. Beginners are more motivated after viewing a role model who highlights expectancy (vs. value) information, despite the role model's objective accomplishments being identical. Further, as individuals move from beginning to maintenance stages of goal pursuit (which I both measure and manipulate), a role model who emphasizes a goal's value becomes increasingly motivating. This research suggests that a one-size-fits-all role model is likely to be ineffective at motivating all individuals. Implications for helping people pursue their goals most effectively are discussed.

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Dedication

I dedicate this thesis to my parents, who have always been my biggest supporters in every endeavor I take on (including this degree). They played a huge role in me getting this degree, from persuading me to go back to school and getting an undergraduate degree, to supporting my cross-country tour in search of the best graduate school. I feel blessed to have their unwavering support—I would not be where I am today with them.

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CHAPTER 1: INTRODUCTION

Successful goal pursuit is associated with many desirable outcomes (e.g., positive affect, subjective well-being) and social influences often determine whether people flounder or flourish when it comes to pursuing their goals (Fitzsimons & Finkel, 2010). One type of social influence that is designed to boost people's motivation in many goal domains (e.g., exercise, diet, purchasing behavior) is the use of role models—or people who can influence others' behaviors by themselves having pursued a goal (Cheryan, Siy, Vichayapai, Drury, & Kim, 2011; Lockwood & Kunda 1997, 1999; Lockwood, Jordan, & Kunda, 2002). It is commonly assumed that role models serve to increase motivation; indeed, comparisons with a role model can lead to inspiration when the role model provides people with a more ambitious or desired vision of their future selves than they would have otherwise considered (e.g., Collins, 1996; Lockwood & Kunda, 1997, 1999). However, there are also conditions under which role models can have no impact whatsoever (e.g., Lockwood & Kunda, 1997, Lockwood, 2002) or even undermine motivation (e.g., Betz & Sekaquaptewa, 2012; Hoyt, 2012; Lockwood et al., 2002).

Given that role models are used in a variety of settings (e.g., Kamins & Gupta, 1994) and that social influences can impact people's important life goals (Fitzsimons & Finkel, 2010), it is vital to understand the conditions under which people are most likely to be positively influenced by role models. Building on past role model research (e.g., Lockwood et al., 2002) I argue that role models must speak to their audience's thoughts, concerns, and feelings (i.e., one's *motivational focus*) to be motivating. In particular, the same role model (with objectively identical accomplishments) can focus on different aspects of his or her accomplishments by highlighting information about the *expectancy*

of goal success (i.e., whether a person thinks he or she has the skills and capabilities to successfully pursue a goal) or the *value of the goal* (i.e., whether people think the goal is worthwhile). Neither focus is likely to equally motivate all individuals; instead, I propose that *goal stage*—whether an individual is beginning to pursue or is maintaining a goal—will moderate what role model focus (expectancy vs. value) will be most motivating. I make this proposal based on previous theorizing that people at different goal stages are motivated for different reasons (cf. Rothman et al., 2011). In particular, I argue that in the beginning stages of pursuit people are focused on the goal’s attainability (“Can I do this?”) and thus role models whose accomplishments are framed in terms of expectancy and efficacy will be most motivating. In contrast, role models who espouse a goal’s value will be motivating as people move from beginners to maintainers, because maintainers are more focused on the goal’s value (“Is it worth it?”).

Role Models as Social Comparison Targets

Role models can be both people in one’s immediate social environment (e.g., parents who affect their children’s habits) and also unknown others who are physically distal (e.g., a successful gym goer’s testimonial to increase membership). Role models can affect people’s motivation and behavior by acting as social comparison targets (Collins, 1996, 2000; Lockwood & Kunda, 1999, 2000). Social comparison theory posits that people look to others to make relative judgments about their current behavior (e.g., “how am I doing now?”) and also their future behavior (e.g., “how might I do in the future?”) (Festinger, 1954; Lockwood, Shaughnessy, Fortune, & Tong, 2012; Lockwood & Kunda, 1999; Suls, Martin & Wheeler, 2002; Wood, 1989).

Within the role model literature, two factors have been frequently highlighted as contributing to role model effectiveness: *attainability* of role model accomplishments (Betz & Sekaquaptewa, 2012; Hoyt, 2012; Lockwood & Kunda, 1997, 2000) and *domain relevance* (Lockwood & Kunda, 1997, 2000; Tesser, 1988). Role models typically deflate motivation if their accomplishments seem unattainable (e.g., Betz & Sekaquaptewa, 2012; Lockwood & Kunda, 1997); for example, middle-school-aged girls perceived female role models who were both STEM majors and stereotypically feminine (e.g., liked reading fashion magazines) as unattainable; that is, participants did not believe it would be easy to be both feminine and excel at STEM. Girls who saw feminine STEM role models reported decreased interest in pursuing STEM courses in the future compared to STEM role models who were not described as overly feminine (Betz & Sekaquaptewa, 2012).

Furthermore, role models are generally ineffective (neither helpful nor harmful) if the domain of their accomplishments does not coincide with their audience's goals. For instance, an aspiring teacher is more likely to be motivated by a successful teacher role model than a successful accountant role model; in the former case comparison processes are more likely to be triggered (Lockwood & Kunda, 1997; also see Tesser, 1988).

Although domain relevance is certainly important for understanding role model effectiveness, I argue that it is only one type of relevance critical for identifying when role models will be maximally effective. For example, it seems likely that future teachers could be motivated by some outstanding teachers but demotivated by other outstanding teachers. To understand this variability, I argue that it is equally important to consider the *motivational relevance* of role models: Does the role model directly address or speak to

the concerns, anxieties, and focus of his or her audience? When there is a fit between the role model's message and an audience member's motivational focus, I argue that people will be most motivated.

A number of distinct lines of research point to a need for messages (in general) to match audience needs and motivations. For example, research in the persuasion literature shows that messages are most persuasive when characteristics of the message match characteristics of the recipient. For instance, when people's attitudes have a cognitive (rather than affective) basis, they are more likely to be persuaded by messages that focus on cognition (rather than affect; e.g., Fabrigar & Petty, 1999; See, Petty, & Fabrigar, 2008).

Research in regulatory fit theory (Higgins, 2000) also provides evidence that people are more persuaded by information that supports preferred goal strategies, which can arise from people's underlying regulatory orientations (Aaker & Lee, 2006; Cesario, Grant, & Higgins, 2004; Cesario & Higgins, 2008; Lee & Aaker, 2004). Regulatory fit theory is often tested in the context of regulatory *focus* theory, which posits that people have two motivational systems: the promotion and prevention systems. The promotion system is concerned with advancement and growth and focuses on goals guided by ideals or aspirations. Typically, eager approach strategies best serve promotion goals. In contrast, the prevention system is concerned with safety and security and is guided towards goals based on duties and obligations. Typically, vigilant avoidant strategies best serve prevention goals.

When people are presented with messages that emphasize the strategic concerns of each orientation (e.g., presenting information to a promotion-focused person using an

eager strategy, or presenting information to a prevention-focused person using a vigilant strategy), they are more persuaded by the message (Cesario & Higgins, 2008; Lee & Aaker, 2004). As an example, Cesario & Higgins (2008) measured people's promotion and prevention focus, and then exposed them to one of two persuasive messages. In both conditions, the message content was identical; however, the body language of the actor was systematically varied to present the information either eagerly—predicted to sustain a promotion orientation—or vigilantly—predicted to sustain a prevention orientation. As predicted, when an actor conveyed eagerness through non-verbal cues (e.g., by using quick and animated body gestures, an open stance, and a fast rate of speech) people found the message more effective to the extent that they were promotion (vs. prevention) focused. In contrast, when an actor conveyed vigilance (by using gestures that signaled slowing down—e.g., “pushing” motions—a more closed body position, with a slower speech rate) the message was more effective for prevention (vs. promotion) focused people. Also tested in the context of regulatory fit theory, there is evidence—which I cover in greater detail in a subsequent section—that messages from role models in particular are most effective when they match the audience's underlying regulatory orientation (Lockwood et al., 2002).

As I develop below, a prominent factor that differentiates a person's *motivational focus* is his or her goal stage—whether the individual is beginning versus maintaining a goal. Consequently, to best understand what types of role models are effective, it is important to consider both the goal stage of the audience and the focus of the role model's message.

Goal Stage as a Determinant of Motivational Focus

Goal pursuers can find themselves at different stages of their goal pursuit as time progresses. Although different models of goal pursuit differ in the number of distinct goal stages they highlight, many models emphasize a distinction between goal initiation (i.e., beginning stages of goal pursuit) and goal maintenance (Prochaska et al., 1994; Rothman et al., 2011; Rothman, 2000). For instance, on January 2nd, many people are in the beginning stages of goal pursuit—going to the gym regularly for the first time. By July 2nd, however, the gym-goers that remain are in the maintenance phase of pursuing their exercise goal.

These distinct stages of goal pursuit are associated with a unique set of tasks and psychological states (e.g., Gollwitzer, 1990; 2012; Rothman et al., 2011). For instance, these different goal stages affect the mindsets that people bring to self-regulatory tasks (Gollwitzer, 1990), how much effort they pour into their goal pursuit (Bonezzi, Brendl, & De Angelis, 2012; Hull, 1932; Liberman & Förster, 2008), and their emotional experience in pursuing goals (Carver & Sheier, 1998). In other words, goal stage appears to affect many aspects of people’s motivation and experiences in pursuing their goals.

Another way that goal stage could affect motivation and goal pursuit, as I review below in more detail, is by shifting people’s focus to one of two constructs that are at the heart of many motivational theories: expectancy information or value information (e.g., Feather, 1982; Vroom, 1965). Building on goal stage models (Rothman et al., 2011) I predict that beginners will be more focused on expectancy information, whereas maintainers will be more focused on value information.

Beginners focus on expectancy. At the beginning of goal pursuit, whether or not people persist at a goal depends largely on whether they believe that they can complete

the requisite goal-related actions to achieve eventual success (Bandura, 1986, 1997; Locke & Latham, 1990). This concern with expectancy or self-efficacy may be particularly acute when people have just begun to pursue a goal because they have accumulated little or no behavioral evidence that signals whether success is attainable (Huang & Zhang, 2011; Rothman et al., 2011). Information about the goal's value ("Is this goal worth the effort?") is presumably less relevant to people in the initial implemental stages of goal pursuit because they have just committed to the goal in the goal selection phase (Gollwitzer, 1990).¹ As an example to clarify why value information might not be as pertinent as expectancy information for beginners, imagine Jen is deciding what goal to pursue for a New Year's resolution (the goal selection phase). Once she decides that she wants to get into better shape, that decision itself implies that she has judged the goal worthwhile to pursue for the time being. Therefore, she is unlikely to continue to dwell on whether it is worthwhile and instead, she can shift her attention to how to coordinate the activities of goal pursuit (Gollwitzer, 1990; 2012). To succeed at this stage, she must be cognizant of whether or not she has the skills and capabilities to execute necessary goal actions. Hence, I propose that beginners (versus maintainers) are relatively more concerned with the question of "Can I do this?" (cf. Huang & Zhang, 2011; Zhang & Huang, 2010).

Existing research and theory supports the idea that beginners are more focused on expectancy (vs. value) information. Indeed, a manipulation that suggested a goal was

¹ Note that several models of goal pursuit distinguish between goal setting and goal striving (see Gollwitzer, 1990, 2012, for a discussion of this distinction; see also Lewin et al., 1944). Goal setting, as is typically conceptualized, occurs when a person is deliberating about whether or not to pursue a goal (Gollwitzer, 1990). This thesis focuses on goal striving, which is then further broken down into people who are beginning a goal and people who are maintaining a goal. Although it seems likely that role models could influence people at the goal setting stage (e.g., Betz & Sekaquaptewa, 2012), the focus of this paper is on the broad category of goal striving; that is, when a person is past deliberating on whether or not a goal should be pursued.

likely be attainable (e.g., when people were made to feel they had made fast versus slow progress) was more motivating for beginners relative to a manipulation that suggested a goal was less attainable (e.g., when people were made to feel that their goal would take longer to achieve; Huang & Zhang, 2011). Critically, goal stage moderated whether people were more motivated by expectancy (vs. value) information. That is, participants who were nearing the end of a goal did *not* show more motivation when that goal seemed more attainable (Huang & Zhang, 2011).

Consistent with this analysis, Rothman (2000; see also Rothman et al., 2011) has theorized that as people move from the beginning stage to the maintenance stage of their goals, the factors that motivate people shift. In his model, he argues that beginners are most motivated when they believe the anticipated outcomes of goal pursuit are favorable (Rothman et al., 2011). In addition, and consistent with my hypothesis, he argues that beginners must feel capable of achieving the favorable outcomes. To the extent that a beginner feels that he or she is efficacious in bringing about the required goal actions, he or she should be motivated to engage in goal pursuit.

There is some empirical support for Rothman's model, at least for the claim that beginners are driven when they believe that they can achieve their goal (with less support for the claim that beginners are driven when they anticipate favorable outcomes). In a longitudinal study investigating smoking cessation, self-efficacy predicted goal initiation (i.e., quit attempts). In contrast, anticipated satisfaction with smoking cessation did *not* predict goal initiation (Hertel et al., 2008). Hence, whereas Rothman's model (2000) assumes that anticipated value is important for beginners, my prediction for beginners is that they will be more intently focused on expectancy information.

Maintainers focus on value. As maintainers continue to invest effort in goal pursuit, they accrue evidence as to whether or not their goal is attainable, and have a more informed view of the types of actions that are needed to complete the goal (Carver & Scheier, 1998). As expectancy information becomes a less dominant focus, maintainers are likely to start assessing whether or not their continued effort is worthwhile and valuable (Rothman, 2000; Rothman et al., 2011).

Why might maintainers focus on value? Ongoing maintenance goals, by definition, are those that require people to continually engage in effortful behavior. Further, goal-directed behavior can require that people exert consistent self-control, which is difficult and often results in failure (e.g., Hofmann, Vohs, & Baumeister, 2012). For example, someone who is maintaining an exercise regime must continue to wake up early and engage in effortful exercise. She must also forego an immediately pleasurable activity (sleeping). In addition to the continued effort to maintain a goal, it is possible that satisfaction or other affective states associated with goal pursuit (e.g., happiness from achieving a slimmer waistline) are dampened as people continue to pursue their goal. Because people adapt to changes in affect relatively quickly (Frederick & Loewenstein, 1999), the experienced satisfaction from each unit of effort may decrease (Kahneman & Tversky, 1979). Because the maintenance stage of pursuit requires people to engage in effortful behavior, possibly without the accompanying affective rewards once associated with goal pursuit, people may have to justify the continued effort by re-considering how worthwhile the goal truly is (Brehm, 1956; Harmon-Jones & Harmon-Jones, 2002; Simon, Greenberg, & Brehm, 1995). In other words, a maintainer might need to focus on

the value of her goal both to justify the continued effort, and to remind herself that the outcomes achieved truly are worthwhile.

There is some relevant empirical and theoretical evidence that supports my claim that maintainers focus more on value (vs. expectancy) information. In an experimental demonstration, Zhang and Huang (2010) reasoned that people could attribute goal progress to themselves (e.g., feeling that they have been rewarded for goal actions that they have personally contributed) or to external factors (e.g., feeling that they have been rewarded for goal actions to which that they did *not* contribute), which the researchers manipulated by telling coffee shop goers that they received stamps on a coffee loyalty card for either their past purchasing behavior (self progress) or because of a promotion (external progress). The authors reasoned that when progress was attributed to the self, people would infer that because they had worked towards the goal, they must find the goal valuable (cf. Bem, 1972). As predicted, when progress was attributed to the self, participants were more motivated if they were nearing the end of their goal (similar to maintaining the goal) rather than when they were at the beginning of their goal (Zhang & Huang, 2010).

Further, Rothman's goal stage model (described above) also supports the idea that maintainers focus on value. In this model, he argues that maintainers are driven when they are satisfied with the outcomes accrued from goal pursuit, as this signifies that the initial decision to engage in pursuit was warranted (Rothman, 2000). Research from this lab examined predictions about maintenance in a longitudinal study on smoking cessation (Hertel et al., 2008). Specifically, people were more likely to be smoke free 6 months after a smoking cessation program to the extent that they were satisfied with the

outcomes of cessation. In contrast, anticipated satisfaction with non-smoking outcomes failed to predict initial quitting behavior (Hertel et al., 2008; See also Baldwin et al., 2006). Although Rothman talks about satisfaction with outcomes as a proxy for “value,” I conceptualize value more broadly. Specifically, a goal’s value can be derived from anything that makes a goal more or less worthwhile. This could be the satisfaction that arises from successful goal pursuit but it could also be due to the underlying reasons that led to goal pursuit (e.g., a person who helps those in need by volunteering at a youth shelter is pursuing her goal because she inherently values helping others, not because serving soup in a cold kitchen is itself satisfying). In addition, I focus on value directly—rather than focusing on outcomes achieved—because value and satisfaction with outcomes can diverge. For example, a person can value a weight loss goal even though he or she is not satisfied with his or her outcomes.

Role Models who Address Motivational Focus are Most Effective

If goal stage is a key factor in determining people’s motivational focus, what types of role models might best address people’s unique focus? I propose that role models who emphasize positive goal expectancies (e.g., “I kept telling myself that I could do it”) will be most motivating to beginners who are uncertain about their own capabilities for goal success. In contrast, I argue that role models who emphasize goal value (e.g., “I kept telling myself it would be worth it”) will be more motivating for maintainers.

Importantly, I argue that these differences in role model focus do not need to stem from differences in role model accomplishment. Rather, even role models with identical accomplishments (e.g., running a half marathon) can target their messages to emphasize either goal expectancies or goal value.

The prediction that role models who focus on different aspects of their goal pursuit will motivate different audiences is consistent with past role model research. Notably, Lockwood and colleagues (2002) have applied the logic of regulatory fit theory (Higgins, 2000) to argue that very different role models might motivate promotion- versus prevention-focused people. As described above, individuals differ in the extent to which they are concerned with nurturance and the pursuit of advancement (promotion focus) versus security and the maintenance of duties (prevention focus) (Higgins, 1997). Lockwood and colleagues (2002) reasoned that because positive role models (i.e., upward comparison targets who are succeeding at a goal) may support the preferred strategies of promotion goals, and negative role models (i.e., downward comparison targets who are failing at a goal) may best support the preferred strategies of prevention goals, these “congruent” role models would be more motivating than baseline. The authors first primed participants with either promotion or prevention goals. Participants then read about a positive or negative role model, or in a control condition did not read about a role model at all.

Participants who read about a congruent role model (i.e., promotion-primed participants who read about a positive role-model, prevention-primed participants who read about a negative role-model) reported greater motivation to pursue their own academic goals than control participants. Further, participants who read about an incongruent role model (i.e., promotion-primed participants who read about a negative role-model, prevention-primed participants who read about a positive role-model) reported *decreased* motivation relative to control (Lockwood et al., 2002, Study 2).

Hence, role models whose messages “matched” participants’ underlying motivational concerns were most motivating.

Although existing evidence supports the proposal that motivational relevance, broadly defined, can determine role model effectiveness, this research was conducted in the context of regulatory focus theory to show that *different* role models (i.e., people who had differing levels of accomplishment—success vs. failure) affected motivation in distinct ways depending on the goal orientation of the audience. In the present set of studies, I argue that goal stage is also a dominant source of people’s motivational focus and that even the *same* role model (i.e., with the same level of accomplishment) may be differentially motivating depending on whether expectancy or value information is highlighted in the message. Better understanding when role models will be most effective will enable policy makers, educational advisors, marketers, and mentors alike to successfully craft role model messages to motivate behavioral change, hence enriching people’s lives by helping them accomplish their goals.

Hypotheses and Study Overview

In sum, the current studies explore the following hypotheses. (a) A critical determinant of a person’s motivational focus is his or her goal stage: At the beginning of goal pursuit, the individual will be most concerned with the question “Can I do this?” whereas at goal maintenance, the individual will be most concerned with the question “Is it worth it?” (b) The same role model can focus on different aspects of his or her goal pursuit; namely on goal expectancies (e.g., “I kept believing I could do it”) or goal value (e.g., “I kept believing it was worth it”), even when level of accomplishment is held

constant (c) Role models will be most effective at motivating an audience when they directly address, or speak to, the audience's motivational focus.

Studies 1a and 1b first establish that people who are beginning a long-term goal have a qualitatively distinct focus compared to people who are maintaining an identical goal. In Studies 2 – 6, I show that a role model with identical accomplishments can focus on different aspects of his or her goal (by focusing on *expectancy* or *value*), and demonstrate that when a role model's accomplishments are framed to speak to an individual's motivation focus, derived from goal stage, the role model will be most effective. I show the robustness of this effect across studies by demonstrating that motivationally relevant role models are most effective whether goal stage is measured (Study 2, 4, 5, & 6) or manipulated (Study 3), and across four distinct operationalizations of expectancy- and value-focused role models.

CHAPTER 2: Studies 1a & 1b

The purpose of the first study was to empirically test the claim that beginners (vs. maintainers) are more focused on *goal expectancy* information whereas maintainers (vs. beginners) are more focused on *goal value* information. I used two methods across two distinct samples to assess people's motivational focus: an open-ended thought-listing task (Study 1a) and a closed-ended scale (Study 1b). Although prior research and theory have hinted that goal stage is associated with a distinct motivational focus (e.g., Hertel et al., 2008; Rothman et al., 2011), there is no research, to my knowledge, that directly assesses whether people's thoughts, feelings, and worries (i.e., their motivational focus) differ systematically as a function of whether they are beginners versus maintainers. Therefore, I designed the first two studies to directly test whether motivational focus differs as a function of goal stage.

Method

Participants. Undergraduate participants ($N = 124$) took part in Study 1a. Four participants did not complete the main dependent variables of interest so their data are not included in the analyses. The final sample consisted of 120 undergraduates (76 females, $M_{\text{age}} = 21.24$, $SD_{\text{age}} = 4.56$) who received partial course credit for volunteering. American adults ($N = 224$; 123 Female, 99 Male, 2 Other, $M_{\text{age}} = 35.45$, $SD_{\text{age}} = 13.01$ years) from Amazon's Mechanical Turk (Mturk) participated in Study 1b, and received \$0.50 (US) remuneration for their time.²

² MTurk is a service offered through Amazon.com in which people complete short tasks (e.g., academic studies) in exchange for money deposited to their Amazon account. Previous research suggests that data obtained on MTurk are just as reliable as data obtained through traditional channels (e.g., offline, with undergraduates) when it comes to internal consistency and test-retest reliability (Buhrmester, Kwang, & Gosling, 2011).

Materials and procedure. Participants in both studies completed background measures (e.g., age, gender). Because this study examined people's health and exercise goal, I also asked them to indicate their current stage of exercise. In these initial studies, I included four different questions to assess exercise stage, two of which were based on the transtheoretical model of behavior change (DiClemente et al., 1991; Marcus, Rakowski, & Rossi, 1992; Prochaska & DiClemente, 1983). Because the items used different response scales, I standardized each item before averaging the standardized values to form a reliable index of participants' current goal stage ($\alpha = .88$; see Table 1 for each item and response scale, as well as the raw mean and standard deviation of each scale). In all subsequent studies, I used only one of these items to assess goal stage (participants could select that their current exercise / physical activity status was one of the following options: *1 = I currently do not exercise and I do not intend to start exercising*; *2 = I currently do not exercise but I am thinking about starting to exercise*; *3 = I currently exercise some but would like to exercise more*; *4 = I currently exercise regularly*; Marcus, Rakowski, & Rossi, 1992) and so I also reported the results in Study 1 using only this item.

Because participants in Study 1b were answering closed-item measures about their thoughts and feelings about exercise, I also included some filler questions about their personality (e.g., a short version of a Big Five Personality measure; Gosling, Rentfrow, & Swann, 2003). These filler items were answered after participants reported their current goal stage (i.e., exercise stage) and before they completed the measure assessing their closed-ended thoughts and feelings about exercise so that there was a less obvious link between participants' exercise stage and their thoughts and concerns.

Table 1. *Measures assessing goal stage in Study 1a and 1b.* [†]This scale was adapted from Marcus, Rakowski, & Rossi, 1992. * This scale was adapted from DiClemente et al., 1991.

Question	Response Scale	Mean (SD) of Scale 1a	Mean (SD) of Scale 1b
Please check the box below that best describes your current exercise / physical activity status [†] :	1 = I currently do not exercise and I do not intend to start exercising; 2 = I currently do not exercise but I am thinking about starting to exercise; 3 = I currently exercise some but would like to exercise more; 4 = I currently exercise regularly	2.97 (0.80)	2.84 (.88)
What is your current level of fitness?	1 = Extremely unfit, 6 = Neither fit nor unfit, 11 = Extremely fit	6.37 (2.07)	6.17 (2.25)
People vary in terms of where they are in terms of their exercise behavior. Some people are at the very beginning of their goal of maintaining a regular exercise regimen, whereas other people are maintaining the goal and have been for a while.	0 = at the very beginning, and 100 = purely in maintenance	47.84 (28.32)	42.47(31.08)
Please move the slider to where you <u>currently</u> are in terms of your health and exercise goals			
Do you exercise regularly? (check one)*	1 = No, and I do NOT intend to in the next 6 months; 2 = No, but I intend to in the next 6 months; 3 = No, but I intend to in the next 30 days; 4 = Yes, I have been for LESS than 3 months; 5 = Yes, I have been for LESS than 6 months; 6 = Yes, I have been for MORE than 6 months.	4.11 (1.50)	N/A

Study 1a participants advanced to a page that had a large text box including the following instructions:

We are interested in your thoughts, concerns, feelings, etc. that you typically have about your exercise goals. As such, we would like you to write anything that comes to your mind about your exercise goals.

Participants were also told to “write as much as you would like, just note that you won't be able to advance until at least 60 seconds have passed” to alert them to the fact that I disabled the ability to advance to the next page before 60 seconds had elapsed.³

Study 1b participants rated their agreement with 7 items that were developed to tap into expectancy focus (e.g., “Whether or not I have the ability to do well at my exercise goals is a pressing issue” $\alpha = .89$) and 7 items that were developed to tap into a value focus (e.g., “I think about why I value my exercise goals” $\alpha = .81$). Participants responded using a 5-point scale, 1 = *Not at all characteristic of my thoughts*, 5 = *Extremely characteristic of my thoughts*. For the full scale, see Appendix A.

Results

Study 1a. Four judges, blind to hypotheses and participants' exercise stage, rated the open-ended thoughts from Study 1a on several items related to whether participants thoughts could be characterized as focused on expectancy information (“Can I do this?”) and on value information (“Is it worth it?”). Specifically, judges were asked, “To what extent does this person focus on...” e.g., a lack of knowledge / confidence in exercising, 1 = *Not at all*, 2 = *Not very much*, 3 = *Somewhat*, 4 = *Quite a bit*, 5 = *Extremely*. See Table 2 for a complete list of coding items including the inter-rater reliability, and for the results of individual regression analyses with the composite of goal stage predicting each coding item, as well as the expectancy- and value-coded composites.

As can be seen in Table 2, judges rated the thoughts of beginners (vs. maintainers) as more likely to contain information related to expectancy (i.e., “Can I do this?”), $\beta = -$

³ Participants spent an average of 153.94 seconds ($SD = 129.01$ seconds) on the webpage. Goal stage did not affect the time participants spent on the webpage, $t(119) = 1.57, p = .119$, although directionally participants spent longer on the webpage to the extent that they were maintainers (vs. beginners).

.21, $t(118) = -2.39$, $p = .019$. In contrast, judges rated the thoughts of maintainers (vs. beginners) as more likely to contain information related to value (i.e., “Is it worth it?”), $\beta = .19$, $t(118) = 2.09$, $p = .038$. As an example of an item that was coded as relatively high (2.69) in expectancy, one participant wrote that “... I don't know how to exercise most efficiently (what exercises work best for me, proper technique, etc).” As an example of a response that was coded as high (2.8) in value one participant wrote: “I want to be fit, both so that I'm healthy, and in order to look good naked...”

Note that subsequent studies in which exercise goal stage is measured (Studies 2, 4, 5) only one measure assessed exercise stage: “Please check the box below that best describes your current exercise / physical activity status:” 1 = *I currently do not exercise and I do not intend to start exercising*, 4 = *I currently exercise regularly*.” (Marcus, et al., 1992). As such, I ran a separate set of regression analyses, using this item as the sole predictor whether thoughts were coded high in expectancy focus (“Can I do it?”) and in value focus (“Is it worth it?”). Using only this measure of goal stage, similar results emerged for coding of expectancy, $\beta = -.22$, $t(118) = -2.48$, $p = .014$, and value, $\beta = .19$, $t(118) = 2.04$, $p = .043$.⁴

⁴ In this study I also included closed-ended measures assessing whether people’s thoughts were characterized by expectancy or value after the open-ended items. I used the same items as in Study 1b with the exception that the item “When I go to exercise, I think of reasons why exercising is important to me” was originally worded “When I go to exercise, I wonder “why do I do this?” Additionally, the item “I think often about why exercising is worthwhile” was originally “I think often about why exercising is worth it.” These changes reflect a subtle distinction between being worried about the goal’s value—which I originally conceptualized maintainers’ concerns as—and a focus on the goal’s value. I first reverse-scored negatively worded items and averaged items into two composites: Expectancy concern ($\alpha = .79$) and value focus ($\alpha = .60$). I predicted that beginners (vs. maintainers) would rate the expectancy (vs. value) concerns as more characteristic of their thoughts. To test this prediction I completed two separate regression analyses with goal stage predicting the expectancy concerns composite and the value focus composite. Both predictions received support: Expectancy concerns: $\beta = -.24$, $t(118) = -2.65$, $p = .009$; Value focus: $\beta = .46$, $t(118) = 5.67$, $p < .001$.

Table 2. Coding items used in Study 1a to assess expectancy and value focus *df= 118

		ICC	B	t*	p value
Expectancy Items	External factors that can get in the way of exercising	.86	-0.56	-1.75	.084
	Internal factors that can get in the way of exercising	.86	-0.24	-2.72	.008
	Lack of Confidence / Knowledge in exercising	.86	-0.07	-.76	.447
	A Desire to increase one's knowledge of health / exercising	.67	0.06	.82	.538
Value Items	Reasons for exercising (e.g., to feel energized), or motivation behind exercise (I want to do this / am doing this because...)	.79	0.19	2.12	.036
	One or more superordinate, abstract goals (e.g., being a fit person; managing stress)	.71	0.17	1.91	.059
	What valuable benefits come, or might come, from exercise (or negatives that are avoided)	.83	0.10	1.09	.279
	Link meaning of exercise to oneself (e.g., it is personally important, or related to a person's core values)	.77	0.18	2.00	.047
Composite		α	B	t*	p value
	Expectancy Focus Composite	.50	-0.21	-2.39	.019
	Value Focus Composite	.82	0.19	2.09	.038

Study 1b. I first reverse-scored negatively-worded items and averaged items into two composites: Expectancy focus ($\alpha = .79$) and value focus ($\alpha = .60$). I predicted that

beginners would rate the expectancy (vs. value) focus items as more characteristic of their thoughts, whereas the opposite pattern would emerge for maintainers. To test this prediction I completed two separate regression analyses with goal stage predicting each composite. Both predictions received support. Expectancy focused items were more strongly endorsed by beginners (vs. maintainers): $\beta = -.24$, $t(118) = -2.65$, $p = .009$. In contrast, endorsement of value-related items was stronger for maintainers (vs. beginners), $\beta = .46$, $t(118) = 5.67$, $p < .001$. Results revealed the same pattern when using only the single-item measure of goal stage to predict an expectancy focus, $\beta = -.35$, $t(222) = -5.50$, $p < .001$, and a value focus, $\beta = .56$, $t(222) = 10.09$, $p < .001$.^{5,6}

Discussion

These studies provided direct support for the assertion that people at different goal stages have a distinct motivational focus. Across an undergraduate student sample and a community sample, and in both open-ended and closed-ended responses, beginners were more focused on expectancy information (“Can I do this?”), whereas maintainers were more focused on value information (“Is it worth it?”). One potential issue with Study 1 is that participants who selected their goal stage as 1 = *I currently do not exercise and I do not intend to start exercising* on the measure of goal stage used in this study (and in Studies 2 and 5) could be viewed as people in the pre-contemplation or contemplation stage (i.e., people without an exercise goal); it could therefore be argued that these individuals should not be included in the analyses. However, there were relatively few

⁵ There was no effect of gender for expectancy concerns, nor did gender interact with goal stage ($ps > .11$). However, for value focus a significant gender by goal stage interaction emerged, $t(218) = 2.20$, $p = .029$ revealing that although goal stage significantly predicted value focus for both males and females, goal stage was a stronger predictor of value focus for females ($B = .65$, $t(218) = 9.08$, $p < .001$) than for males ($B = .42$, $t(218) = 5.44$, $p < .001$).

⁶ Participants went on to take part in a larger study—not reported here. All other manipulations and measures were assessed after the measures reported here.

individuals who fell into this group (3.23% in Study 1a; 7.60% in Study 1b) and the qualitative responses of these individuals suggested that they were not easily differentiable from participants who clearly indicated that they were at the beginning of pursuing an exercise goal (i.e., those who selected “2” on the goal stage measure). For example, one participant who selected goal stage = 1 wrote: “I dont (sic) have many specific exercise goals. I like to walk when traveling to locations in town and I occasionally attend an exercise class with my mother on weekday mornings” and another participant who identified as goal stage = 1 indicated “I have been doing palates (sic) every week, which has been helping with my posture.” Thus, it appeared that this group of participants did not actually eschew all exercise and looked quite similar to participants who clearly identified as beginners. Hence, I felt confident that this group of people could be conceptualized as belonging to the broad category of beginners (i.e., as people who are taking few or little steps to exercise rather than people who explicitly reject the goal to exercise) and that I could treat this scale as a continuous measure in subsequent studies (Studies 2 and 5 use a similar analysis). I return to this issue in the general discussion.

Better understanding the motivational focus of people as a function of goal stage is an important undertaking in its own right. For instance, the assumption that beginners and maintainers have unique motivational concerns and focus is explicitly stated in different models of goal pursuit (e.g., Rothman et al., 2011; Zhang & Huang, 2010), but has not received direct empirical support. To my knowledge, this data provides the first test that the assumptions underlying these models are likely to reflect some truth.

Knowing what types of unique information beginners and maintainers are focused on has the potential to provide insights into the types of factors that will motivate people across stages of goal pursuit. However, these initial studies leave open the question of whether or not differently-focused role models will in fact motivate people at any given stage. That is, people could differ in their motivational focus, but still be motivated by *any* role model who has achieved a high level of accomplishment. The subsequent studies assess whether the unique motivational focus of beginners and maintainers can best be addressed by role models who focus on distinct aspects of their goal pursuit. Specifically, I predicted that role models who focus on expectancy-related information will best speak to the motivational focus of beginners, whereas role models who focus on value-related information will best address the focus of maintainers.

CHAPTER 3: Study 2

Study 2 was designed to provide initial evidence that role models are motivating when they express a motivational focus that is relevant to a person's goal stage. Similar to past research (Lockwood et al., 2002), I hypothesized that role models who addressed the motivational focus of their audience would be most effective. Unlike past research, I attempted to show that role models could convey the same accomplishments, but focus on distinct aspects. I did this by changing key phrases the role model used to describe his or her goal, while leaving the objective level of accomplishment constant across role model condition.

Method

Participants. Participants were 110 Mturk adults (64 Male, 43 Female, 3 Other / Prefer not to say; $M_{\text{age}} = 32.90$ years, $SD_{\text{age}} = 11.65$ years) who completed an online survey for \$0.50 cents (US) remuneration.

Materials and procedure. After completing basic demographic questions (e.g., age, gender), participants identified their current goal stage using a one-item measure described in Study 1 adapted from Marcus et al. (1992). Participants' average exercise stage was 2.93 ($SD = 0.81$) on a 4-point scale.

Participants read that “On the next page we will present you with a pamphlet. Please study the pamphlet for 60 seconds. Later questions rely on your knowledge of the pamphlet, so please examine it carefully.” Participants next “evaluated” a pamphlet, actually the manipulation of role model type, ostensibly about the Couch-to-5k program (www.C25K.com) that encourages people to start exercising more. On the pamphlet was a role model named Scott (or Sarah—gender matched) Miller who described his or her

fitness accomplishments. In both the expectancy and value conditions the role model had started at the same point (i.e., started running 6 months ago), and his or her accomplishments were identical (i.e., just completed a successful half marathon).

However, I varied the role model's *focus*.

In the expectancy condition, the title of the pamphlet was "You can get there" and the testimonial started by telling participants that "The couch to 5K program taught me that anyone can become a runner." At the end of the testimonial, the role model said "Anyone can get here. If I can do it, anyone can!" (See Appendix B for full stimuli).

In the value condition, the title of the pamphlet was "It's too important to pass up!" and the testimonial started by telling participants that "The couch to 5K program taught me that being a runner is important." At the end of the value testimonial, the role model said "Running is so valuable for my life! I don't know what I would do if I couldn't run."

Consistent with the cover story, participants then evaluated the pamphlet (e.g., "Overall, how would you rate the quality of this pamphlet?"), including 2 items to assess whether the role model's focus affected perceptions of accomplishments (i.e., "How healthy do you think the person on the pamphlet is?" "How active do you think the person on the pamphlet is?" $1 = \text{Not at all}$, $9 = \text{Very}$). The role models were perceived as equally accomplished ($t < 1$, $p = .43$), and neither goal stage nor the interaction predicted accomplishment ($ps > .3$). Hence the differently-focused role models that I designed did not differ in their perceived competence.

To assess participants' behavioral intentions, or motivation, I adapted a 14-item scale used in previous role model research (e.g., "I plan to work harder at any exercise I

do,” “I will procrastinate less when it comes to exercising” $1 = \text{Not at all true}$, $11 = \text{Very true}$; Lockwood, et al., 2002, see Appendix C for the full scale). The items were averaged to form a reliable index of behavioral intentions ($\alpha = .96$).

Results

I regressed behavioral intentions on role model type (expectancy focus = -1, value focus = 1), goal stage (measured continuously and mean-centered), and the role model by goal stage interaction. There was an effect of role model type, $B = -1.80$, $SE = 0.72$, $t(106) = -2.50$, $p = .014$, such that expectancy-focused (vs. value-focused) role models were more motivating. There was no effect of exercise stage ($p = .34$). However, this main effect was qualified by the predicted role model by goal stage interaction, $B = .59$, $SE = .24$, $t(106) = 2.48$, $p = .015$.

Using procedures described by Aiken and West (1991) to decompose the interaction, I first examined the simple effects for the two contrasts about which I had the most confidence. For beginners ($-1SD = 2.12$, corresponding most closely with the scale point *I currently do not exercise but I am thinking about starting to exercise*), as predicted, the expectancy-focused role model was more motivating than the value-focused role model, $B = -.55$, $SE = .27$, $t(106) = -2.05$, $p = .043$. Next, I assessed whether value-focused role models were more motivating for people who are maintaining a goal ($+1SD = 3.73$, corresponding most closely with the scale point *I currently exercise regularly*), relative to beginners. Results supported this prediction: after reading about a value role model maintainers reported greater motivation compared to beginners, $B = .82$, $SE = .30$, $t(106) = 2.73$, $p = .007$.

There was a trend for maintainers to report more motivation after seeing a value- (vs. expectancy-) focused role model, $B = .41$, $SE = .27$, $t(106) = 1.51$, $p = .134$, although this effect failed to reach significance. Further, there was no difference in motivation as a function of goal stage after exposure to an expectancy role model, $B = -.36$, $SE = .36$, $t(106) = -.98$, $p = .328$, See Figure 1.^{7,8}

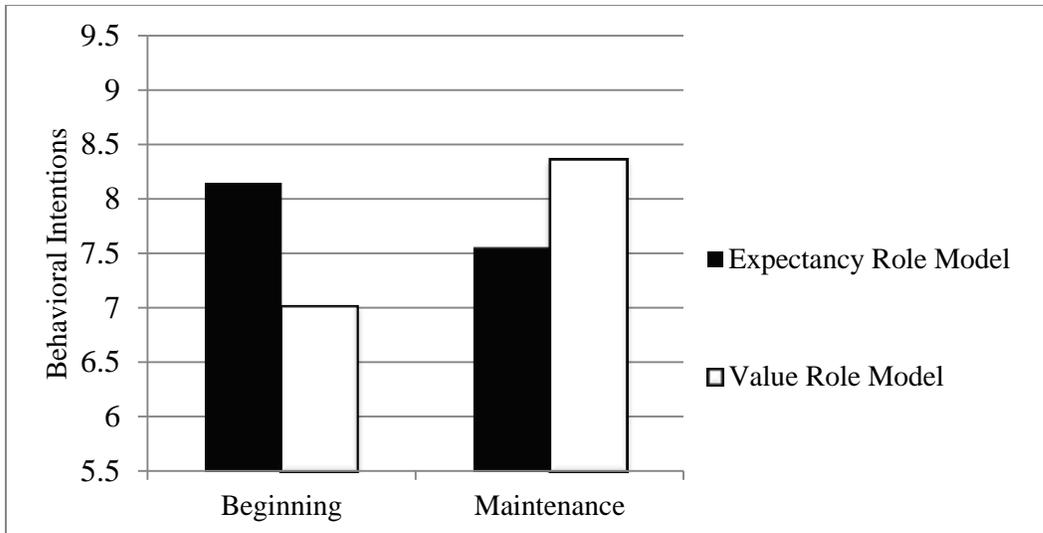


Figure 1. Predicted scores for behavioral intentions to pursue one’s exercise goal as a function of measured goal stage and manipulated role model focus (Study 2). Beginning and maintenance are considered -1 and +1 SD from the mean, respectively.

Discussion

Study 2 provided the first evidence that role models with the same objective accomplishments can focus on different aspects of their goal pursuit, and that doing so better targeted people’s motivational focus derived from goal stage. Beginners were more motivated when role models’ accomplishments focused on goal expectancies (vs. goal

⁷ Gender was not related to motivation, nor did gender interact with any variable ($ps >.09$).

⁸ Note that in this study, as well as Studies 3 and 4, I included an additional measure of motivation that I designed. For clarity in the results section, I do not report the results of this exploratory scale, which typically showed the same pattern of results as the behavioral intentions scale reported in-text.

value), and value role models became increasingly motivating as people moved from beginners to maintainers.

A cross-over interaction might have failed to emerge because of asymmetries in beginners' versus maintainers' tolerance for focus-inconsistent role models. Although only speculative, it seems possible that the different focus of role models will be more impactful for beginners than for maintainers. Specifically, maintainers might have a higher "tolerance" for focus-mismatched information (i.e., expectancy information) than beginners' tolerance for focus-mismatched information (value information). Although beginners are not hypothesized to be focused on value information as much as maintainers, when value information is directly presented to them they may start to have hesitations about their dedication to the goal (e.g., "I know this goal is valuable, but will I ever be *that* dedicated to the goal?"). In contrast, a focus-mismatched role model for maintainers (i.e., expectancy role models) might not cause maintainers to question whether they can attain the goal because they have already done so. I return to this issue in Study 5, in which I include a no role-model control condition.

Although not all simple effects were significant, there was support for two critical contrasts: Beginners were more motivated by expectancy (vs. value) role models, and value role models were more motivating for maintainers (vs. beginners). Hence, Study 2 provided initial evidence that beginners and maintainers are motivated by differently-focused role models—even when those role models objectively achieved the same level of success. One lingering question that remained was whether or not these results were specific to the way that goal stage was operationalized. Specifically, goal stage was measured—rather than manipulated—in this study. However, it seemed possible that

temporarily altering whether people were thinking like a beginner or a maintainer might induce the motivational focus that was captured by the measure of goal stage in Study 2. In Study 3, then, I wanted to manipulate one's stage of goal pursuit in the interest of replicating the findings of Study 2.

CHAPTER 4: Study 3

Study 3 was designed to provide a conceptual replication of Study 2 while also more directly testing the causal role of goal stage. I wanted to assess whether temporarily feeling like a beginner or maintainer would shift the type of role model that would be most motivating. As such, I manipulated *both* goal stage and the focus of a role model. To manipulate goal stage, people imagined what it would be like to be at either the beginning or maintenance stage of an exercise goal, which I hypothesized would put people into a beginning vs. maintenance “mindset” (controlling for their current level of fitness—which did not interact with manipulated goal stage). After describing the thoughts and feelings they would have at the goal stage to which they were assigned, participants saw either an expectancy or value role model (using the same pamphlets from Study 2), and then indicated their intention to pursue their own exercise goal.

Method

Participants. I recruited 105 participants from Mturk (59 female; 45 male; 1 Other / prefer not to say; $M_{\text{age}} = 33.61$, $SD_{\text{age}} = 12.07$) who were remunerated \$0.50 (US) for their time. I did not retain data from two participants who indicated that they were physically unable to exercise due to medical reasons (multiple sclerosis and asthma). I also did not retain data from one participant who failed an attention check (described below).

Materials and procedure. Participants answered basic demographic questions, but did *not* answer questions about their current goal stage as in previous studies to avoid potential conflicts with the goal stage manipulation.

To manipulate goal stage participants were randomly assigned to imagine a scenario about beginning or maintaining an exercise goal. Specifically, participants read [beginning condition text in italics; maintenance text underlined]:

Please imagine the following scenario in as much detail as you can!
Imagine it is a few days [*into/until*] the New Year. [*You recently made a resolution /You had made a resolution last year*] to get into better physical shape, by combining exercise and good diet. [*You are still very early on in terms of your progress and are at the beginning of this important goal/You are now far advanced in terms of your progress and are at the maintenance stage of this important goal*]. Take a moment to imagine the thoughts and feelings you might have being at this stage of your goal pursuit.

All participants were then asked to “Write a brief statement about how you would feel, and what you would think, [*at the beginning/in the maintenance stage*] of your goal pursuit” in a provided text box.

On the next page, participants were randomly assigned to see one of the pamphlets from Study 2 (see Appendix B), with either an expectancy or value role model. Directly underneath the pamphlet, participants responded to three questions about the pamphlet as an attention check (e.g., What is the program called? *How to run a lot; Couch to 5K; or Working out for dummies*). As indicated above, I excluded data from 1 participant who did not pass this attention check (the questions were on the same page as the pamphlet).

As in Study 2, and consistent with the cover story, participants answered questions about the pamphlet, including how healthy and active the person on the pamphlet seemed ($\alpha = .93$) before completing the 14-item measure of behavioral intentions from Study 2 ($\alpha = .95$). Neither the goal stage manipulation, the role model manipulation, nor their interaction predicted how healthy or active the role model appeared ($ps > .10$).

Before debriefing participants about the true purpose of the study, participants reported their current level of fitness (i.e., What is your current level of fitness, $1 = \textit{Extremely unfit}$, $9 = \textit{Extremely fit}$), which was included as a covariate.⁹

Results

I submitted the behavioral intentions composite to a 2 (goal stage: beginning, maintenance) X 2 (role model type: expectancy, value) between-subjects ANOVA and observed only the predicted interaction, $F(1, 97) = 3.79, p = .055, \eta_p^2 = .038$, although it was only marginally significant (see Figure 2 and Table 3). Counter to predictions, beginners were equally motivated by expectancy- and value-focused role models ($F < 1$). Replicating Study 2's pattern (but not significantly), people reported greater motivation after seeing a value role model to the extent they were in the maintainer condition (vs. beginner condition), $F(1, 97) = 2.54, p = .11, \eta_p^2 = .025$. After seeing an expectancy role model, there was no difference in motivation as a function of goal stage, $F(1, 97) = 1.20, p = .28, \eta_p^2 = .012$

What appeared to drive the interaction in this study was that for maintainers, motivation was higher when they were exposed to a value (vs. expectancy) role model, $F(1, 97) = 5.53, p = .021, \eta_p^2 = .054$.^{10, 11}

⁹ Current level of fitness did not moderate any findings, $ps > .15$.

¹⁰ The only effect gender had was a marginally significant interaction with goal stage, $F(1, 92) = 3.29, p = .073, \eta_p^2 = .04$, which revealed that men were more motivated after imagining being in maintenance (vs. beginners), $F(1, 92) = 3.44, p = .067$, whereas overall women reported equal motivation whether they imagined being in the beginning or maintenance stage of their pursuit, $F(1, 92) = .73, p = .39$.

¹¹ Re-running the analysis without including the covariate showed the same pattern of results. The interaction remained marginally significant: $F(1, 98) = 2.97, p = .088, \eta_p^2 = .029$.

Table 3. Means and standard deviations as a function of condition (Study 3).

Goal Stage	Role Model Type	Mean	Std. Deviation
Beginning	Expectancy	7.76	2.30
	Value	7.75	1.85
Maintenance	Expectancy	7.30	1.69
	Value	8.62	1.85

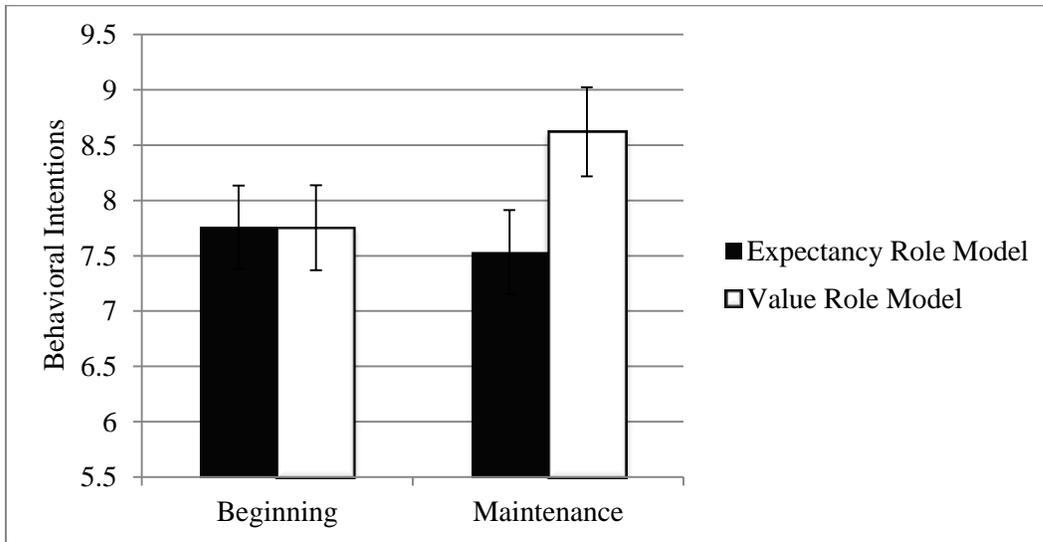


Figure 2. Average score for behavioral intentions as a function of manipulated goal stage and role model focus (Study 3). Bars represent standard errors.

Discussion

Study 3 was designed to temporarily induce the motivational focus of beginners and maintainers, and to replicate Study 2's pattern in which goal stage was measured. As in Study 2, an interaction between goal stage (manipulated) and role model focus emerged. However, the nature of the interaction differed between studies. For one, the two significant contrasts from Study 2 were non-significant in Study 3. Instead, what drove the interaction in Study 3 was that maintainers found greater inspiration from value

(vs. expectancy) role models. Why might this pattern of results differ from Study 2? One reason is that there could be asymmetries in how difficult it is to induce a beginner or a maintainer mindset. That is, it could be more difficult to ‘look back’ at how one thought and felt at the beginning of one’s goal stage rather than imagine what it might feel like to maintain a goal. Hence, the inability to truly think and feel like a goal beginner might have made it more difficult to detect a difference between expectancy- and value-focused role models for ‘beginners.’ A separate analysis that tested for the presence of a three-way interaction between role model type, manipulated goal stage, and *measured* goal stage revealed a non-significant three-way interaction, $B = -.02$, $t(94) = -.05$, $p = .96$. The only other effects that emerged as significant in this analysis were (a) a main effect of actual fitness level, $B = .42$, $t(94) = 2.19$, $p = .03$, and (b) the predicted interaction, $B = 1.68$, $t(94) = 2.17$, $p = .03$, all other $ps > .15$. Empirically, it did not seem that the goal stage manipulation was more effective for people as a function of goal stage.

Another possibility for the lack of consistency between Study 2 and 3 could be due to weaknesses associated with Study 3’s manipulation. In hindsight, I might have inadvertently manipulated not only whether participants were thinking like a beginner or a maintainer, but also whether participants were thinking about the present (in the beginner condition) or the past (in the maintenance condition). It is possible that doing so had participants think about distinct levels of psychological (i.e., temporal) distance, which is known to affect a focus on feasibility and desirability (Liberman & Trope, 1998).

More pragmatically, the manipulation of goal stage might have failed to get participants to truly take on the motivational focus hypothesized to underlie goal stage.

Future research might try to manipulate goal stage using other methods, beyond scenario-based manipulations. For example, based on research on social comparison theory (e.g., Collins, 1996), it seems possible that upwards comparisons (e.g., comparing oneself to a personal trainer) would make most people feel like a relative beginner. In contrast, downwards comparisons (e.g. comparing oneself to an obese person with limited mobility) would make most people feel like a relative maintainer.

Although the exact pattern from Study 2 was not replicated, Study 3 provides some promise for the idea that goal stage can be subtly shifted, and that doing so can alter the types of role model messages that motivate individuals. Manipulating goal stage is an important component in making causal claims about how motivational focus makes certain role models more or less motivating, an issue I return to in the general discussion. However, in the remaining studies, I turn my attention to other issues such as conveying expectancy and value information using different role model manipulations, including no role model control groups to clarify the direction of the effects, and assessing behavior in different goal domains. Further, given that my main predictions involve an interaction between the measured variable and a manipulated variable, it seems that a reverse-causal interpretation of the effects I present in the remainder of the studies is unlikely.

I built upon Study 2's method of assessing goal stage by *selecting* participants based on their goal stage, rather than measure goal stage continuously, in Study 4. This approach allowed me to examine only people who identified themselves as unambiguous beginners or maintainers, rather than obtaining predicted values for beginners or maintainers.

CHAPTER 5: Study 4

In Study 4, I again manipulated whether participants saw a role model who focused on expectancy or on value. However, to ensure that any differences I observed in prior studies were not due solely to the manipulation used, I operationalized expectancy- and value-focused role models using language that was less explicitly referencing expectancy and value. Drawing on the dynamics of self-regulation approach, which proposes that people can view their goal actions as indicating progress towards a goal vs. commitment to a goal (see Fishbach, Zhang, & Koo, 2009, for a review), I manipulated expectancy by focusing on the *progress* a role model had made. Progress should highlight that a goal is attainable because seeing someone else make progress towards a goal suggests that goal achievement is possible (e.g., “If this person can make progress towards their goal, then I can too”). I manipulated value by focusing on the role model’s *commitment* to his or her goal. Commitment signals that an actor is dedicated to a worthwhile goal.

Based on the results of Study 2, I predicted that (a) beginners would be most motivated after seeing a progress (vs. value) role model and (b) value role models would become increasingly motivating to maintainers (vs. beginners). Study 4 sought to build upon the previous studies by underscoring that information about expectancy and value can be signaled to beginners and maintainers using subtle shifts in language conveyed by role models.

Method

Participants. I recruited 80 undergraduates from a larger population of students who had completed a mass pre-screen questionnaire at the beginning of the academic

term. Amongst other pre-screen questions, participants indicated their current exercise stage as assessed by the goal stage measure used in Studies 1 and 2. I then set the restriction that participants could only sign up for this study if they had indicated in the pre-screen that their goal stage was “2 = *I currently do not exercise but I am thinking about starting to exercise*,” who made up the beginners group (N = 42) or “4 = *I currently exercise regularly*” who made up the maintainers group (N = 38). Although it could be argued that the item associated with the beginners group might have included some individuals who were still deliberating, I chose this scale-point because it likely best captures the transition from post-decisional preparation to initiation (Prochaska & DiClemente, 1982). Because the distinction between progress and commitment is quite subtle, and relies on a firm grasp of English, I excluded the data of 23 people who reported English as their second language, hence the final sample was N = 57. The results without exclusions are reported in a footnote.

Materials and procedure. Participants completed demographic questions and confirmed their exercise stage. Participants read a modified pamphlet from the previous two studies in which the role model described his / her accomplishments by focusing on expectancy (i.e., on the progress he/she had made) or on value (i.e., on how committed he/she was to the goal). Specifically, participants in the expectancy condition read:

How has Couch to 5k been for me? Although I had made a little progress, I had a long way to go. Every week I progressed more and more, overcoming previous challenges that I never knew I could overcome. Finally, I was lined up at the starting line for my first 5k run. I really felt like I had come so far when I crossed that finish line with a time that far exceeded my expectations. I made great progress—I’ve come a long way from the couch!

In contrast, participants in the value condition read:

How has Couch to 5k been for me? *Although I started having never ran a day in my life, I remember that even the first time I went jogging I knew I was committed to going all the way. Every week I ran longer and longer distances with commitment and dedication. Finally, I was lined up at the starting line for my first 5k run. I really felt that my devotion had paid off when I crossed that finish line with a time that far exceeded my expectations. I'm committed to running, and it's worth it!*

As in the previous studies, participants answered questions consistent with the cover story that they were evaluating fitness materials, and then rated how healthy and active the role model appeared ($\alpha = .90$) to ensure the manipulation of role model focus did not affect perceptions of role model accomplishment. Both role models were perceived as equally accomplished, $F(1, 53) = 2.12, p = .15$, although the pattern of means revealed that expectancy role models (who discussed their accomplishments as making progress) were more accomplished than value role models (who discussed their accomplishments as showing commitment). There was also an unexpected effect of goal stage on perceived accomplishment, such that beginners ($M = 7.09, SE = .27$) perceived the role models as more accomplished than maintainers ($M = 6.23, SE = .23$), $F(1, 53) = 6.10, p = .017$. Participants went on to rate their behavioral intentions using the same 14-item measure described in Study 2 and 3 ($\alpha = .95$; e.g., “I plan to work harder at any exercise I do”).

Results

A 2 (role model focus: expectancy, value) X 2 (goal stage: beginning, maintenance) between-subjects ANOVA tested whether a role model who speaks to an individual's current motivational focus was most motivating. A main effect of exercise stage emerged, $F(1, 53) = 9.90, p = .003, \eta_p^2 = .157$, such that maintainers reported greater behavioral intentions than beginners ($M_{\text{beginner}} = 6.74, SD_{\text{beginner}} = 1.73; M_{\text{maintainer}}$

= 7.99, $SD_{\text{maintainer}} = 1.90$). This main effect was qualified by the predicted interaction, $F(1, 53) = 3.99, p = .052, \eta_p^2 = .069$, replicating Study 2's pattern of results (see Table 4 and Figure 3).

Table 4. Means and standard deviations for each condition (Study 4).

Role Model Type	Exercise Stage	Mean	Std. Deviation
Expectancy	Beginning	7.26	1.73
	Maintenance	7.83	1.89
Value	Beginning	5.58	1.11
	Maintenance	8.12	1.83

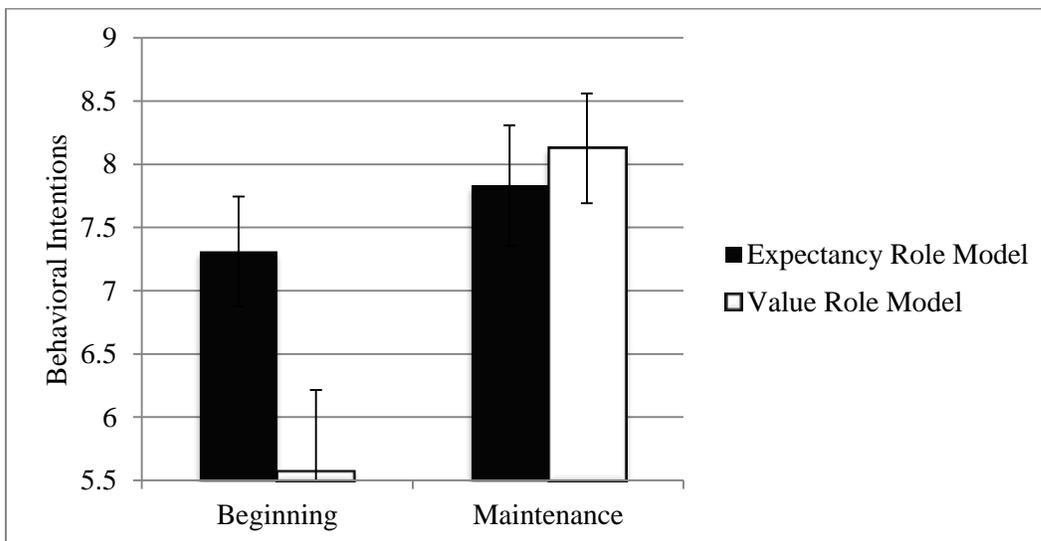


Figure 3. Behavioral intentions as a function of goal stage and role model focus (Study 4). Bars represent standard error of the mean.

For beginners, a role model whose accomplishments focused on expectancy (i.e., who framed their accomplishments in terms of progress) was more motivating than a role model whose accomplishments focused on value (i.e., who framed their accomplishments in terms of commitment), $F(1, 53) = 4.93, p = .031, \eta_p^2 = .085$. For participants who saw

value role models, motivation was higher for maintainers (vs. beginners), $F(1, 53) = 11.15, p = .002, \eta_p^2 = .174$.

There was no difference in motivation for maintainers as a function of role model type ($F < 1$). There was also no difference in motivation for people who saw an expectancy role model as a function of goal stage ($F < 1$).^{12, 13}

Discussion

This study replicated the pattern of results of Study 2 using both a different operationalization of expectancy and value concerns (by highlighting the progress vs. commitment of a role model, respectively) and by using a goal stage selection procedure that recruited only people who were unambiguously beginners or maintainers. Hence, this study provided converging support that when role models share their audience's motivational focus, they are most motivating.

A goal of this study was to show that expectancy and value can be operationalized using subtly different language associated with different goal pursuit models (e.g., Fishbach et al., 2009). This study adds to the discussion of how progress and commitment information might differentially impact people's motivation depending on one's goal stage. In particular, this study shows that *other people's* progress towards or commitment to a goal can have different implications for people's personal motivation—even when the progress or commitment is referring to identical accomplishments towards

¹² Analyzing data from all participants, the main effect of exercise stage held, $F(1, 76) = 6.46, p = .013, \eta_p^2 = .078$; however, the predicted interaction dropped to non-significance, $F(1, 76) = 0.95, p = .33, \eta_p^2 = .012$. I did observe the same pattern of means for beginners ($M_{\text{progress}} = 7.26, SD_{\text{progress}} = 1.75; M_{\text{commitment}} = 6.71, SD_{\text{commitment}} = 1.65$), although this simple effect also dropped to non-significance, $F(1, 76) = 0.96, p = .331, \eta_p^2 = .012$. For people who saw the commitment role model, I replicated the significant simple effect of goal stage, $F(1, 76) = 6.09, p = .016, \eta_p^2 = .074$, such that maintainers were more motivated by commitment-focused role models compared to beginners ($M_{\text{beginner}} = 6.71, SD_{\text{beginner}} = 1.65; M_{\text{maintainer}} = 8.14, SD_{\text{maintainer}} = 1.90$).

¹³ Including gender as a factor revealed that overall, females ($M = 7.46, SE = 0.28$) reported higher motivation than males ($M = 6.79, SE = 0.49$), $F(1, 48) = 3.87, p = .055$.

an identical goal. Previous research on the dynamics of self-regulation typically have examined only whether people view their own goal actions in terms of progress or commitment. This research program finds that when people view their past actions as signaling progress, they tend to engage in more goal balancing and turn their efforts to other goals (e.g., Fishbach & Dhar, 2005). In contrast, in the current studies, viewing another person's past actions in terms of progress boosted motivation (for beginners), resulting in goal highlighting. Therefore this study provides some preliminary evidence that viewing one's own goal actions in terms of progress or commitment may have distinct implications compared to viewing a role model's goal actions in terms of progress or commitment. Future research might examine moderating factors to understand when other people's progress (vs. commitment) motivates an individual—as in the present study—or whether other people's progress causes goal balancing—as is typical in the dynamics of self-regulation approach (e.g., Fishbach & Dhar, 2005). For instance, perhaps when the other person is very close (e.g., a romantic relationship partner), a participant might show effects consistent with the dynamics of self-regulation approach, whereas when the other person is more distant (e.g., an unknown role model) a participant might show effects consistent with the present study.

This study also had some limitations. Indeed, some of this study's limitations were also present in the previous 2 studies (i.e., Studies 2 – 4). For one, behavioral intentions to pursue one's goal have so far only been assessed directly after reading about the role model. It is one thing to *say* that one is motivated, but another to sustain those intentions over time. To examine whether participants' motivation is sustained over time, Study 5 included not only a measure of motivation directly after role model exposure, but

also included a follow-up questionnaire one week after participation to determine whether motivationally relevant role models continued to influence motivation.

In addition, a limitation of this and previous studies is that it is unclear whether focus-matched role models increase motivation, focus-mismatched role models decrease motivation, or some combination of the two. Therefore, in the final two studies I included a no role model control condition to assess the direction of the effects previously observed.

Finally, a minor limitation of this and the previous studies is that the pamphlets used to convey a role model's message were very short. Although the advantage of these short-style pamphlets is that they are typical of the types used to quickly convey a message (e.g., in advertising), they are not as rich as many of the role model stories that are conveyed in everyday life (e.g., through news stories, testimonials, and the like). Therefore, in the remainder of the studies, I developed lengthier role model descriptions, which had the added advantage of being able to reiterate the role model focus.

CHAPTER 6: Study 5

The role models in Study 5 focused on weight loss. Given that women, on average, report greater concern and monitoring of their weight (see Cooper, Taylor, Cooper, & Fairburn, 1987), I only recruited women. After seeing a full-page description of either an expectancy or value role model—or no role model in a control condition—participants answered questions about their behavioral intentions just as in Studies 2 – 4. In addition, participants received an online survey link through email one week after participation in which they indicated how much they had exercised in the prior week. I predicted that motivationally relevant role models would be more immediately motivating than both focus-mismatched role models and compared to no role models. I predicted that these effects would persist over a one-week period to influence self-reported behavioral change.

Method

Participants. Female undergraduates ($N = 182$; $M_{age} = 20.49$ years, $SD_{age} = 4.89$) participated in a 2-part study on “College Student Attitudes on Exercise.” Participants ($N = 131$) completed the follow-up questionnaire, which was sent through email one week after completing Part 1 (72% follow-up rate). Exercise stage, role model condition, or their interaction did not predict whether participants completed the follow-up ($ps > .18$).

Materials and procedure, Part 1. Participants completed basic demographic questions, as well as the measure of goal stage used in previous studies ($M = 2.86$, $SD = 0.73$). Participants then responded to a set of filler items (e.g., the Regulatory Focus Questionnaire, Higgins et al., 2001).

Participants saw a slightly modified cover story that read: “We are now interested in people's interest in different exercise-related materials and products. On the following page we will ask you to carefully review a testimonial.” Participants were unable to advance past the role model manipulation for 60 seconds so that all participants would be encouraged to read the lengthy role model description in full (see Appendix D for the role model description).

The role model was based on testimonials that can be found for most gyms (e.g., <http://blog.goodlifefitness.com/success-stories>). Participants were randomly assigned to see either an expectancy-focused role model, a value-focused role model, or no role model in the control condition. In both role model conditions, participants read about a woman named Allison who started out university by gaining 25 pounds the first semester, realized she was out of shape, and sought out exercise at a fictitious gym (“Dynamic Gym”). In both conditions, Allison experienced an identical setback (i.e., gaining weight over the holiday season), but ultimately persisted at exercising. All of these elements were identical across conditions. What differed was how Allison described each step. For example, the title of the expectancy article read “Allison discovers working out is doable” whereas the title of the value article read “Allison makes working out a priority.” As another example of the different focus of the role model, participants read [*expectancy text italicized*; value text underlined]:

Although growing up I was quite active, once I got to university, I didn't know if [*I was capable of keeping up regular exercise./exercising regularly was worth all of the time—does consistent exercise really pay off?*] I moved away from home and became very inactive. On top of the inactivity, the food choices I made were horrible. I gained 25lbs in the first semester; I was out of control and [*did not know whether I could do anything about it /did not pay any attention to it*].

On the following page, participants answered some questions to ensure they read the article. Consistent with the cover story, they also answered questions about the testimonial (e.g., How well-written was this testimonial? *1 = Not at all, 7 = Extremely*), and about Allison (e.g., How successful is Allison? *1 = Not at all, 9 = Extremely*).

Participants in the control condition were not presented with any testimonial. Instead, they advanced directly to the dependent variable, which was the measure of behavioral intentions used in previous studies ($\alpha = .96$). Participants entered their e-mail address so that they would be sent a follow-up survey exactly one-week after participating.

Methods and procedure, Part 2. After re-consenting to participate, participants learned that they would be asked about their behavior over the week since completing Part 1 of the study. Before responding to the dependent variables, participants were given 30 seconds to think about the time they spent exercising in the 7 days since completing Part 1.

Leisure-time exercise questionnaire. Participants first completed a modified version of the Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1985). Specifically, participants were asked to report how many times they exercised for more than 15 minutes during their free time in each of 4 categories: (A) Strenuous Exercise (HEART BEATS RAPIDLY) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller blading, vigorous swimming, vigorous long distance bicycling); B) Moderate Exercise (NOT EXHAUSTING) (e.g., hot yoga, fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, dancing); C) Mild Exercise (MINIMAL EFFORT)

(e.g., yoga, archery, fishing, bowling, golf, leisurely walking); and (D) How many times did you exercise for more than 15 minutes specifically at a gym?

Participants indicated how many times they engaged in the specified type of exercise, and for how long, on average, each session was. As recommended by Godin and Shephard (1985), I calculated an exercise score using the following scoring procedure: Weekly leisure activity = ((9 X Strenuous) + (5 X Moderate) + (3 X Light)).

Perceived behavioral change. Participants next reported on how their exercise behavior had changed (if at all) since completing Part 1. The response scale was designed to consider participants' typical exercise behavior. Participants responded to the item "I exercised ..." on a scale from 1 = *Much less than normal*, 4 = *Exactly the same as normal*, 7 = *Much more than normal*. Participants also responded to 4 items assessing how much their exercise goals were prioritized (I prioritized my health and exercise goals...; I thought about my health and exercise goals...; I put my health and exercise goals ahead of my other life goals...; My health and exercise goals were on my mind...) using the same scale. I averaged the 5 items together to form a reliable composite of self-reported behavioral change ($\alpha = .91$).

Part 1 Results

I first averaged the items that assessed perceptions of role model accomplishment and success ($\alpha = .86$). There was no effect of condition ($p > .22$), goal stage ($p > .38$), or the interaction between goal stage and condition ($p > .88$) on how accomplished the role model appeared, suggesting that both role models appeared equally accomplished. The

role model was perceived as marginally more likable when she focused on expectancy (vs. value), $B = -.46$, $SE = .27$, $t(112) = -1.72$, $p = .088$.¹⁴

I mean-centered exercise stage, dummy coded condition (no-role-model control = 0, 0; expectancy-focused role model = 1, 0; value focused role model = 0, 1) and created interaction terms. I entered exercise stage and the two dummy codes representing condition in the first step, and entered the two interaction terms on the second step. Only the predicted two-way interaction emerged as significant, $F_{change}(2, 176) = 4.03$, $p = .02$, $R^2_{change} = .043$. See Figure 4. To decompose this interaction, I followed procedures outlined by Aiken and West (1991) to examine predicted scores at +1 (3.59) and -1 SD (2.13) on exercise stage (corresponding most closely to scale points *I currently do not exercise but I am thinking about starting to exercise* and *I currently exercise regularly*, representing beginners and maintainers, respectively).

Replicating the pattern of previous studies, beginners were marginally more motivated after seeing an expectancy role model compared to a value role model, $\beta = .21$, $t(176) = 1.70$, $p = .092$. As can be seen in Figure 4, the control condition fell in between the expectancy and value role model conditions, but did not significantly differ from either (expectancy vs. control, $\beta = .12$, $t(176) = .95$, $p = .345$; value vs. control, $\beta = -.09$, $t(176) = -.79$, $p = .434$).

Maintainers reported greater motivation after seeing a value role model (vs. an expectancy role model, $\beta = -.29$, $t(176) = -2.27$, $p = .024$, and vs. a no role model control, $\beta = .25$, $t(176) = 2.01$, $p = .046$). Maintainers received no motivational benefit from seeing an expectancy role model vs. a no role model control ($p > .78$).

¹⁴ In examining only the expectancy and value conditions—i.e., not including the control condition—I observed a two-way interaction between expectancy and value condition predicting motivation (the Part 1 dependent variable) while controlling for how likeable the role model is rated.

Further replicating the pattern of previous studies, participants who saw a value role model became increasingly motivated to the extent that they were maintainers (vs. beginners), $\beta = .438$, $t(176) = 3.12$, $p = .002$.

Goal stage did not affect motivation within either the expectancy condition, $\beta = -.083$, $t(176) = -.68$, $p = .497$, nor the control condition, $\beta = .069$, $t(176) = .56$, $p = .575$.

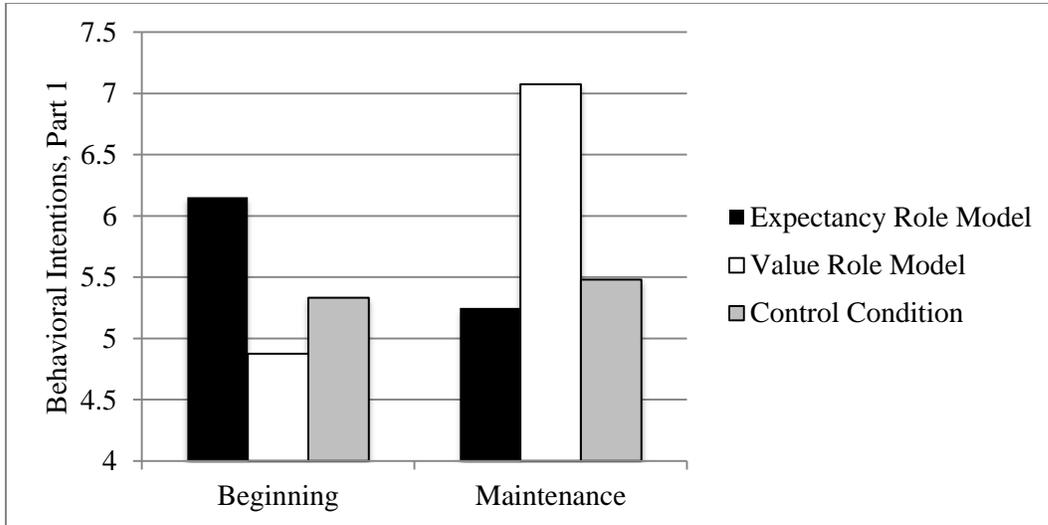


Figure 4. Predicted values for Part 1's behavioral intentions from a regression analysis as a function of goal stage and role model focus (Study 5).

Part 2 Results

Leisure-time exercise questionnaire. In asking participants the absolute number of times they exercised, as assessed with the GLTEQ, only a main effect of exercise stage emerged on this measure, $\beta = .49$, $t(124) = 3.71$, $p < .001$. Hence, this self-report exercise measure did not show the predicted interaction. I discuss possible reasons for this null finding in the Study discussion.

Perceived behavioral change. Participants' perceived behavioral change showed the predicted interaction, $F_{change}(2, 124) = 8.87$, $p < .001$, $R^2_{change} = .12$, see Figure 5, and Table 6 for simple effects analyses. Using the same procedures described above to

decompose the interaction, I first tested whether beginners reported increasing their exercise behavior more when they saw an expectancy (vs. value) role model. Results supported this prediction, $\beta = .35$, $t(1, 124) = 2.29$, $p = .024$. Providing insight into the direction of the effect, I found that the expectancy role model also boosted behavioral change relative to a no role model control condition, $\beta = .51$, $t(124) = 3.48$, $p = .001$. Further clarifying the direction of the effect, participants in the no role model condition and the value role model condition did not differ from one another, $\beta = .16$, $t(124) = 1.21$, $p = .229$, suggesting that beginners who saw a focus-mismatched (i.e., value) role model did not change their behavior relative to seeing no role model at all.

Replicating the results from Part 1 (and Studies 2 and 4), participants who saw a value role model were more motivated to the extent that they were maintainers (vs. beginners), $\beta = .30$, $t(124) = 1.95$, $p = .054$. However, this pattern also emerged, unexpectedly, for participants in the control condition, $\beta = .53$, $t(124) = 3.91$, $p < .001$. The opposite pattern emerged for participants exposed to expectancy role models, $\beta = -.29$, $t(124) = -2.00$, $p = .047$.

For maintainers, replicating the behavioral intentions measure from Part 1, value (vs. expectancy) role models were marginally more motivating, $\beta = -.23$, $t(124) = -1.70$, $p = .091$. Further, relative to a no role model control condition, participants who saw an expectancy-focused role model were *less* motivated, $\beta = -.29$, $t(124) = -2.36$, $p = .020$, whereas unexpectedly, value role models did not differ, $\beta = -.06$, $t(124) = -.426$, $p = .671$.

Table 5. *Simple effects analysis for beginners (-1SD) and maintainers (+1SD) for perceived behavioral change (Study 5).*

	B	t(120)	p
Beginners			
Expectancy vs. Value	0.96	2.38	.019
Expectancy vs. Control	1.20	3.03	.003
Control vs. Value	0.24	0.65	.519
Maintainers			
Expectancy vs. Value	-0.65	-1.78	.083
Expectancy vs. Control	-0.80	-2.39	.018
Control vs. Value	-0.15	-0.40	.688
Value			
Beginning vs. Maintenance	0.66	2.36	.020
Expectancy			
Beginning vs. Maintenance	-0.43	-1.65	.101
Control			
Beginning vs. Maintenance	0.92	3.78	.000

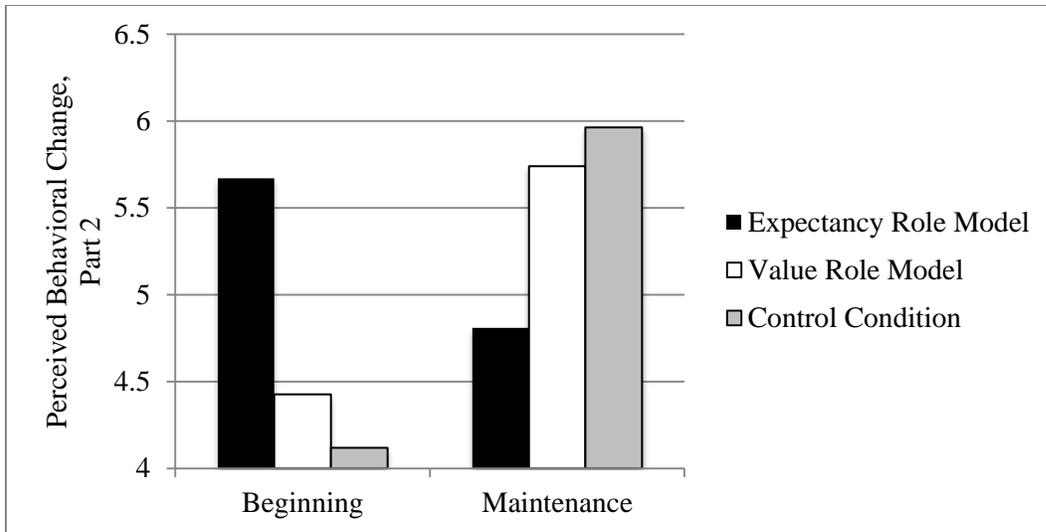


Figure 5. Predicted scores for participants' perceived behavioral change over a one-week period as a function of goal stage and role model exposure (Study 5, Part 2).

Discussion

Study 5 built on the previous studies in several ways. First, I began to assess the lasting influence of motivationally relevant role models by following up with participants one week after exposure to the role models. Second, I included a no-role-model control group to better assess the direction of the effects. Third, participants saw a more involved role model description that mirrored those common in testimonials. In general, this study demonstrated that when people are exposed to role models who share their focus, they report greater goal-relevant behavioral intentions initially and report changing their behavior over an extended period (one week) in line with their intentions.

Although predictions were generally supported, there were some unanticipated findings. In Part 1, the predicted difference between expectancy- and value-focused role models for beginners reached marginal significance; unexpectedly, the control condition did not differ from either role model condition. I am hesitant to conclude that role models made no difference to beginners, especially when one considers the follow-up data: Here

beginners reported greater behavioral change after seeing an expectancy role model compared to a value role model. What might have been different about the role models in the present study? Although only speculative, it seems possible that with lengthier role model descriptions participants needed more time to consider the role model's story and map that story onto their own goal pursuit. Future research could systematically vary the length of time between role model exposure and motivation assessment to directly address this possibility.

In Part 2, I chose two measures that I thought would capture behavioral change over the one-week period. However, both were self-report measures. It is interesting that of the two self-report measures, one (the GLTQ) did not show the predicted interaction (and only showed that maintainers reported exercising more than beginners) whereas the other (perceived behavioral change) did show the predicted interaction. Several possibilities exist as to why the two measures did not converge.

I chose the GLTQ because it is an established self-report measure that typically captures actual exercise behavior (Godin & Shephard, 1985). This measure asked about three broad categories of behavior as opposed to a more detailed recollection of individual behaviors (e.g., "How many times did you do X?"). Although previous research has used this measure as a proxy for actual behavior, the GLTQ is still susceptible to issues associated with other self-reported measures. For example, this measure required people to recall specific instances over a one-week period, and also to separate behavior into three distinct categories. It seems possible that participants' memories for this level of detail could be inaccurate, resulting in a failure to detect the predicted interaction. It also seems possible that mentally accounting for all of their

exercise-related behaviors, and placing them in three broad categories was difficult, leading them to more arbitrarily assign minutes to each category.

Fortunately, the measure of perceived behavioral change did show the predicted interaction, and largely replicated the same pattern as found in Part 1 (and across Studies 2 – 4). This measure did not require participants to remember and report specific instances of their physical activities from the past week, but rather, the measure asked them to report their general perception that they had exercised more relative to a typical week. Indeed, one strength of the perceptions of behavioral change measure was that it essentially controlled statistically for typical exercise patterns (because the scale measured exercise behavior relative to a typical week).

Finally, even if participants' actual behavior did not in fact change after seeing a focus-matched role model (as the GLTQ indicated), but their perceptions of their exercise behavior did (as the perceived behavioral change measure indicated), it still seems possible that these changed perceptions could eventually lead to behavioral change. Research on self-perception (Bem, 1972) shows that people look to their prior behavior to infer their attitudes. For example, Karen might come to a conclusion about how committed she is to exercise by thinking about her past exercise behavior. If she thinks her exercise behavior has increased (e.g., as was the case in Study 5's perceived behavioral change measure when role models matched participants' motivational focus), she might infer that she is more committed to exercise than if she perceives that her exercise has remained constant. The increased feelings of commitment to her goal could subsequently increase her goal-related behavior. Therefore, perceptions of her exercise behavior might be an important first step to changing actual behavior. This exciting

possibility remains for future research, which could follow-up with participants across longer timespans (e.g., a month or a semester).

Another complexity in this study was that in Part 2, although maintainers who saw a value role model reported greater behavioral change than maintainers who saw an expectancy role model, value role models did not differ from the control condition. This seemed to be a function of the control condition increasing self-reported exercise behavior, but only for maintainers. Although only speculative, it seems possible that maintainers in the control condition might have simply benefited from monitoring their behavior over the one-week period (cf. Carver & Sheier, 1982, 1998; Quinn, Pascoe, Neal, & Wood, 2010). Although it was never made explicit that participants would have to report back on their behavior, participants knew that they would be completing a follow-up survey after having answered questions about their intentions to exercise. In terms of why this proposed monitoring effect occurred only for maintainers, it is possible that beginners had a fairly low level of exercise to report—therefore, monitoring did not increase their low frequency behavior. Another possibility as to why monitoring alone (i.e., in the control condition) would have increased exercise behavior for maintainers, but not for beginners, relates to the distinct motivational focus of beginners and maintainers. Assuming that monitoring caused people to become more cognizant of their motivational focus, maintainers would become more cognizant of value-related cognitions, which seem exercise-promotive (e.g., if Jen is continually thinking about how valuable her exercise goal is, she might exercise more). In contrast, beginners would become more cognizant of expectancy-related cognitions, which seem less likely to promote future exercise (e.g., if Frank is continually thinking about how he is not sure

whether he has the skills and resources to pursue his goal, he likely will not exercise more).

CHAPTER 7: Study 6

Studies 2-5 exclusively examined goals that have a beginning but do not necessarily have a clear end point (i.e., “maintenance goals”). That is, people must continually exert themselves to “achieve” their health and exercise goals. Study 6 had two main goals. First, I wanted to examine another important goal domain in which role models are frequently found. As such I designed expectancy and value role models whose achievements were in the domain of academic performance. Second, by examining an academic context, this final study also began to explore a potentially important boundary condition of the effects I have shown. Namely, I started to investigate whether role models have the same motivational effects in goal domains that have a clear end-point, such as pursuing an academic degree, compared to goal domains that are ongoing, such as exercise and health goals.

There are several important distinctions that can be made between goals that have a clear end-point and maintenance goals. Having a clear end point allows people to easily compare their current level of progress with the final objective. For example, knowing that one has 4 years to complete 32 courses provides clear guidelines as to how one is doing (i.e., one must complete 8 courses a year on average to reach one’s goal). When a person is falling behind on his or her goal, it is a more scalable problem to realize just how far behind he or she is when pursuing a goal with a clear endpoint (vs. a maintenance goal). Different types of goals, then, may inspire people to take a different focus across the stages of goal pursuit. Specifically, whereas both types of goals should spawn a similar motivational focus for beginners (i.e., a focus on expectancy), the two types of goals may lead to a divergent motivational focus as people move beyond the

beginning stages. For people who have been pursuing a finite goal for an extended period of time (who I will refer to as “advanced pursuers”), their motivational focus might be less strongly centered around the value of their goal. Rather, they may be more focused on the extent to which they are able to effectively finish the goal (cf. Gollwitzer, 2012; Huang & Zhang, 2011).

For advanced pursuers, seeing a role model’s outstanding accomplishments (whether they are framed in terms of expectancy or value) might simply highlight a discrepancy between the advanced pursuer and the role model. In other words, seeing either an expectancy or value role model might deflate the motivation of an advanced pursuer. This prediction is consistent with previous research that examined first and fourth year’s self-views in reaction to seeing an outstanding academic role model (Lockwood & Kunda, 1997). In this research, first and fourth year university students either immediately rated themselves (control condition) or read about an outstanding student of the same academic major before completing the self-rating task. Reading about a role model boosted first year students’ (i.e., beginners’) self-views, whereas reading about a role model (non-significantly) harmed fourth year students’ (i.e., advanced pursuers’) self-views.

Study 6’s goal was to investigate a potential boundary condition of the inspirational effects of value role models for people who are no longer beginners. Specifically, I examined role models whose accomplishments were in a goal domain that has a clear end point (academics). I hypothesized that although value role models motivate maintainers, they would fail to motivate advanced pursuers. Indeed, for advanced pursuers of a finite goal I suspected that *neither* type of role model (expectancy

or value) would lead to motivation (cf. Lockwood & Kunda, 1997). I made this prediction because both expectancy and value role model's accomplishments might seem unattainable to advanced pursuers, which based on previous research should lead to a lack of motivation (or even demotivation; Lockwood & Kunda, 1997).

Furthermore, Study 6 allowed me to test a more nuanced hypothesis about when beginners are motivated by role models. Specifically, in Lockwood and Kunda's (1997) research, beginners were motivated to the extent that a role model's accomplishments were in a relevant goal domain and were perceived to be attainable. I expected to replicate the basic finding: I hypothesized that beginners would be more motivated after seeing a role model than advanced pursuers. However, I expected to extend this result by showing that beginners can see a role model whose accomplishments are both in a relevant domain (i.e., Psychology, for up-and-coming Psychology majors) and are attainable, but these beginners might still fail to become motivated. Only when the role model addresses a person's motivational focus—which for a beginner will be a focus on expectancy—will the role model motivate the beginner.

Method

Participants. I recruited 158 undergraduate participants to take part in a study entitled “Academic and University Experiences” that was ostensibly interested in a variety of aspects of University life. As in Study 4, participants completed a pre-screen questionnaire at the beginning of the term (at least 2 weeks before participating in the main study). In the pre-screen questionnaire, participants indicated what best described their undergraduate university student status. Only participants who selected (a) “I am at the beginning of my undergraduate studies” (N = 51) or (b) “I am nearing the end of my

undergraduate studies” (N = 76) were recruited to participate and made up the beginning vs. advanced pursuer groups, respectively. I excluded data for 31 additional participants who did not re-select one of these options at the time of the survey, leaving a final sample of 127 undergraduates ($M_{\text{age}} = 21.43$ years, $SD_{\text{age}} = 5.43$; $M_{\text{year in university}} = 2.90$, $SD_{\text{year in university}} = 1.46$). All participants in pre-screen indicated that they were or intended to become Psychology majors; thus the role model—an outstanding Psychology student—was domain relevant to all participants (Lockwood & Kunda, 1997).

Materials and procedure. Participants learned that they would read and evaluate an article from a University of Waterloo publication, as well as answer questions about their own academic experiences. In actual fact, the article contained the role model manipulation and the questions assessed participants’ behavioral intentions to pursue their academic goals (see Appendix E).

Participants first completed a general demographic questionnaire. Participants confirmed their current university student status, and as mentioned, only data from participants who identified as beginners or advanced pursuers at the time of the study were retained for analysis. Participants also indicated their year in university.

Participants read that the University of Waterloo was interested in getting student feedback on its new article formats, and that they would read a sample article and answer comprehension and evaluation questions about the article. Participants were randomly assigned to see an expectancy role model, a value role model, or a no-role model control article. In both of the role model conditions, participants read about a new feature in the University of Waterloo (UW) newspaper *Imprint* that was allegedly set to recur each semester. This feature showcased former UW students and included an interview with a

successful student. I manipulated whether the student, Jenna (or Jack, gender matched) Moore's accomplishments were expectancy- or value-focused. For example, in the expectancy condition, participants read quotes by the role model such as "I always wanted to know how to best understand the human mind. I worked at my studies, and kept believing that I could put in the time and work towards completing my schooling." In contrast, in the value condition, participants instead read "I always valued understanding the human mind. During my studies, I kept in mind how important my schooling is to me." The article ended with the role model offering advice: "Make sure to remind yourself that you *can* get there, whatever major you are in! If you give yourself time and put in the effort, you really can do anything" (expectancy condition); "Make sure to remind yourself that you value whatever major you are in! If it's important to you, and you know why you do it, you will succeed" (value condition). Participants in the control condition instead read an article about a self-serve Tim Horton's coffee shop opening up on campus (see Appendix E for full stimuli).

Participants in all conditions then answered questions consistent with the cover story (e.g., "Overall, how would you rate the quality of this UW article?" 1 = *Very poor quality*, 9 = *Very good quality*).

Dependent Measures

Behavioral intentions. I next presented participants with a scale used in previous role model research (Lockwood et al., 2002) to assess behavioral intentions towards academics (e.g., "I will try to stop engaging in social activities that interfere with schoolwork." 1 = Not at all true, 11 = Very true, $\alpha = .93$). See Appendix F for full scale.

Weekend minutes pursuing one's goal. To assess behavioral intentions using a distinct measure, I also asked participants how they planned to spend an upcoming weekend. The measure listed individual tasks that were either academic (i.e., studying for tests, doing readings for class, working on assignments) or non-academic (e.g., shopping for groceries). Participants indicated how many minutes they anticipated spending on each task. To assess behavioral intentions to pursue one's academic goal, I averaged the anticipated time spent on academic tasks, calculated the total amount of time spent on all activities, and made a proportion score of time spent on academic activities relative to the total time participants anticipated spending on all tasks (Laurin, Kay, & Fitzsimons, 2014).

Proportion of time spent on goal categories. I also included a measure of behavioral intentions that asked participants to indicate how they planned to allocate their time using 7 broad categories (school work; paid work; connecting with friends; exercise; sleep; recreation / leisure / "me" time; Other). Participants could only advance to the next page if they divided up their time among the categories to equal 100%.

Participants were fully debriefed about the true purpose of the study, and provided their post-debrief consent.

Results

Behavioral intentions. I first examined the behavioral intentions measure used in the prior 5 studies (adapted for academic pursuit; e.g., "I will try to stop engaging in social activities that interfere with schoolwork"). I conducted a 3 (role model: expectancy, value, control) X 2 (goal stage: beginner, near-the-end) between subjects ANOVA. There was a main effect of role model type, $F(2, 120) = 8.11, p < .001, \eta_p^2$

=.12, such that relative to the expectancy ($M = 8.13, SE = .30$) and control ($M = 8.5, SE = .27$) conditions, the value role model ($M = 6.9, SE = .31$) was less motivating (as revealed by posthoc tests; $t(120) = 2.39, p = .018$; $t(120) = 3.94, p < .001$, respectively).

Importantly, this main effect was qualified by the predicted interaction, $F(2, 120) = 3.27, p = .042, \eta_p^2 = .05$ (Figure 6, Table 6, & Table 7).

Table 6. Means and standard errors for academic behavioral intentions as a function of goal stage and role model condition (Study 6).

Role Model Type	Exercise Stage	Mean	SE
Control	Beginning	8.26	0.37
	Advanced Pursuit	8.75	0.38
Expectancy	Beginning	8.84	0.48
	Advanced Pursuit	7.42	0.37
Value	Beginning	6.73	0.52
	Advanced Pursuit	7.08	0.33

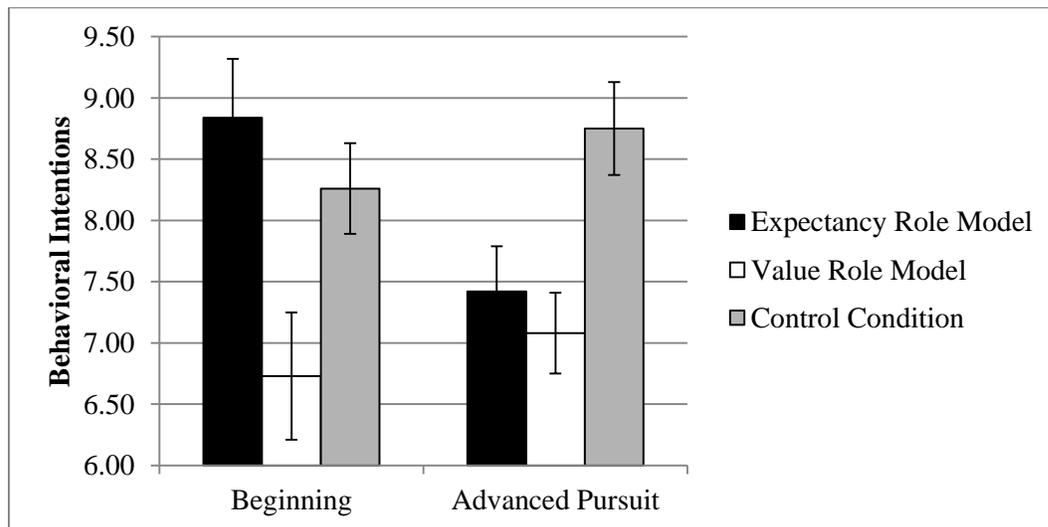


Figure 6. Behavioral intentions as a function of goal stage and role-model type (Study 6). Bars represent standard errors.

Beginners. Conceptually replicating previous results in this thesis, beginners were more motivated after seeing an expectancy vs. value-focused role model, $t(120) = 3.80, p < .001$, despite the fact that both role models had achieved the exact same level of success. Although in the predicted direction, the comparison between a no role model control and the expectancy role model condition did not achieve statistical significance, $p = .22$. Interestingly, beginners who were exposed to a value-focused role model were *less* motivated than those who saw no role model at all, $t(120) = 3.06, p < .003$. Hence, even though in both conditions the role model had completed the same accomplishments, focusing on the value of those accomplishments had a very different (and negative) effect on beginner participants' motivation. Hence, for beginners, I largely replicated the effects from Studies 2 – 5 in this dissertation and extended them to a finite academic goal.

Advanced pursuers. When participants were near the end of their academic goal, not only were value role models no more motivating than expectancy-focused role models, $t < 1$, but advanced pursuers showed *demotivation* after expectancy-focused ($t(120) = 2.24, p = .03$) and value-focused ($t(120) = 2.96, p < .004$) role models, relative to a control condition. Hence, replicating prior research (Lockwood & Kunda, 1997, Study 2) this study revealed that when a role model's accomplishments were unattainable (due to a lack of time to reach the same heights), motivation suffers.

Within role model condition contrasts. Across the previous studies I observed that value role models became increasingly motivating as people moved from beginners to maintainers. In this study that examined academic goals—that have a clear end point—I did not expect value role models to speak to advanced pursuers' motivational focus. Indeed, no differences emerged in terms of motivation as a function of goal stage in this

study, $F < 1$. At baseline (i.e., in the no role model control condition), there were also no differences in motivation, $F < 1$. In contrast, for participants who saw an expectancy role model, they reported more motivation to the extent that they were beginners (vs. advanced pursuers), $F(1, 120) = 5.53, p = .020, \eta_p^2 = .04$.¹⁵

Table 7. Simple effects analysis for Study 6's academic behavioral intentions measure.

	<i>t</i> (120)	<i>p</i>
Beginners		
Expectancy vs. Value	3.80	<.001
Expectancy vs. Control	1.22	.22
Control vs. Value	3.06	<.003
Advanced Pursuers		
Expectancy vs. Value	0.61	.54
Expectancy vs. Control	2.24	.03
Control vs. Value	2.96	<.004
Value		
Beginning vs. Maintenance	0.57	.568
Expectancy		
Beginning vs. Maintenance	5.53	.020
Control		
Beginning vs. Maintenance	0.85	.359

¹⁵ Gender was not associated with behavioral intentions, nor were any interactions with gender significant, $ps > .15$.

Weekend minutes pursuing one's goal. Contrary to predictions, I did not observe an interaction in terms of how many minutes participants anticipated spending on academics in a future weekend, $F < 1$. I observed only a marginal effect of goal stage, $F(1, 118) = 3.09, p = .082, \eta_p^2 = .03$, such that advanced pursuers anticipated spending marginally more time on academics than beginners. This effect only emerged in looking at the proportion of time participants anticipated spending on their academics, and not when looking at the absolute number of minutes participants anticipated spending on their academics.

Percentage of time spent on goal categories. For the percentage of time participants intended to spend on academics in the future, I observed only the predicted interaction, $F(2, 119) = 3.58, p = .031, \eta_p^2 = .06$. As can be seen in Tables 8 and 9, replicating previous findings, for beginners, expectancy-focused role models increased the intention to allocate time to academics by over 11% compared to the control condition ($t(119) = -2.51, p = .013$), and by over 8% compared to the value role model (although this latter effect failed to reach significance, $t(119) = 1.64, p = .10$). In contrast, role model condition did not significantly affect advanced students' intentions, although the means were in the same direction as the first measure of behavioral intentions (see Table 8).¹⁶

¹⁶ Gender did not affect, nor did it interact to predict, percentage of time allocated to academics, $ps > .16$.

Table 8. Means and standard errors of percentage of time spent on academics as a function of role model condition and academic stage (Study 6).

Role Model Type	Academic Goal Stage	Mean	SE
Control	Beginning	24.88	2.91
	Advanced Pursuit	31.82	3.04
Expectancy	Beginning	36.54	3.96
	Advanced Pursuit	26.17	2.91
Value	Beginning	27.92	4.12
	Advanced Pursuit	27.80	2.61

Table 9. *Simple effects analysis for Study 6's percentage of time spent on academics dependent variable.*

	<i>t</i> (119)	<i>p</i>
Beginners		
Expectancy vs. Value	1.64	.10
Expectancy vs. Control	-2.51	.013
Control vs. Value	0.64	.52
Advanced Pursuers		
Expectancy vs. Value	0.41	.68
Expectancy vs. Control	1.30	.20
Control vs. Value	0.97	.33
Value		
Beginning vs. Maintenance	$F < 1$.98
Expectancy		
Beginning vs. Maintenance	4.45	.037
Control		
Beginning vs. Maintenance	2.72	.102

Discussion

Study 6 provided further support for the hypothesis that role models are most effective when their messages speak to their audience's motivational focus. In particular, Study 6 suggested that an important boundary condition for the inspirational effects of value role models is the type of goal a person is pursuing. In contrast to Studies 2 – 5, Study 6 showed that value role models fail to inspire advanced pursuers. In fact, neither an expectancy nor a value role model motivated advanced pursuers. Instead, seeing either

type of role model resulted in demotivation for advanced pursuers, relative to reading about a neutral topic. This finding replicated previous research by Lockwood and Kunda (1997) that underscored that a role model's accomplishments must seem attainable for motivation to occur.

In Study 6, it seemed likely that advanced pursuers were demotivated by either role model type because the role model's accomplishments were unattainable (regardless of how their accomplishments were framed). Therefore, it is conceivable that a role model could be crafted to effectively address the motivational focus of an advanced pursuer, by the role model showcasing his or her *attainable* accomplishments. For example, perhaps a role model whose accomplishments were more typical of the average student, but who only realized after graduation the true potential of his or her undergraduate degree (e.g., "I never knew how many doors would open up for me until after graduation") would seem attainable, and could speak to the focus of an advanced pursuer (e.g., a focus on outcomes after graduation).

Replicating past research by Lockwood and Kunda (1997), this study demonstrated that beginners were more motivated (than advanced pursuers) in response to reading about a role model. Extending this past research, I provided a more nuanced distinction of the *type* of role model that beginners found motivating. Specifically, as in Studies 2 – 5, beginners reported greater motivation not just to any role model; rather, beginners were most motivated after seeing an expectancy role model (relative to both a value role model and a no role model control; although these differences did not always reach statistical significance). Therefore, the type of role model that is most motivating for beginners did *not* depend on the type of goal (finite vs. maintenance). For beginners,

either type of role model's accomplishments still seemed attainable. What differentiates the two role models was that expectancy role models addressed beginners' motivational focus to a greater extent than did value role models.

CHAPTER 8: General Discussion

Previous research makes clear that people’s motivation can increase, decrease, or stay the same after seeing a role model (e.g., Cheryan et al., 2011; Hoyt, 2012; Lockwood & Kunda, 1997, 1999; Lockwood et al., 2002). The goal of this thesis was to provide insight into when role models will be most effective at motivating their audience. The answer I put forth was that role models can focus on either expectancy or value information (even when describing identical accomplishments) and that each focus can better address the motivational focus of beginners and maintainers, respectively. In particular, I proposed that goal stage can influence a person’s motivational focus, such that beginners are more focused on expectancy information and maintainers are more focused on value information.

In Study 1a and 1b, regardless of whether participants listed their thoughts (1a) or rated how well different statements characterized their thoughts (1b), beginners were more focused on issues of expectancy (i.e., “Can I get there?”) whereas maintainers were more focused on issues of value (i.e., “Is it worth it?”). Although these initial studies add to the literature on goal stage more broadly—by testing underlying assumptions in goal pursuit models (Rothman et al., 2011)—I used this information to inform my predictions about what types of role models would be most motivating, and to whom. Studies 2 – 6 found support for the idea that when there is a “fit” between a role model’s message and the motivational focus relevant to the target’s goal stage, people reported greater behavioral intentions to subsequently pursue their health and exercise goals (Studies 2 – 5) or their academic goals (Study 6).

Regardless of how expectancy and value role models were operationalized, I found that beginners tended to be more motivated by an expectancy role model, whereas value role models were increasingly more motivating for maintainers (vs. beginners). Indeed, across Studies 2, 4, and 5, this basic pattern was conceptually replicated using 3 unique operationalizations of expectancy and value role models, and by using 2 different measurement procedures to assess goal stage. Instead of measuring goal stage throughout, Study 3 attempted to manipulate goal stage, which produced similar results for the maintenance phase, although people assigned to the beginning condition did not show preference for expectancy (vs. value) role models.

Studies 2 – 4 included only comparisons of expectancy and value role models whereas Studies 5 and 6 included control conditions. The control allowed me to test whether (a) focus-matched role models were more motivating than seeing no role model at all, (b) focus-mismatched role models were *demotivating* relative to seeing no role model, or (c) both. Based on Study 5, it appeared that option (a) was best supported: Focus-matched role models were more motivating than a baseline (focus-matched role models were also more motivating than focus-mismatched role models). One might have expected that given that both types of role models had achieved identical accomplishments, relative to a no role model control group, even focus-mismatched role models would boost motivation; however, this view was not supported. Instead, mismatched role models were *less* beneficial for people's motivation relative to a focus-matched role model. Study 5 also provided some initial evidence that role models can impact people's behavior over a one-week period.

Study 6 began to examine role models whose achievements were in a goal domain that had a definite end point (in this case, pursuing an academic degree), and also included a control condition. This study replicated the results for beginners described above: expectancy-focused role models were more motivating than value-focused role models. Further, this differential effect of expectancy versus value role models for beginners adds an important caveat to previous role model literature. Past research (Lockwood & Kunda, 1997) suggests that beginners will be motivated by any role model as long as their accomplishments are in a relevant domain. Instead, Study 6 demonstrated that the accomplishments of a role model must speak to a beginners' expectancy focus to result in motivation.

I speculated that participants in Study 6—pursuing a goal with a clear endpoint—might have a different motivational focus than people who are pursuing an ongoing maintenance goal (Studies 1 – 5). Although I did not collect data on the motivational focus of advanced pursuers, I found that neither expectancy nor value role models seemed to speak to their motivational focus: For advanced pursuers, seeing any role model decreased motivation. This finding replicated past research (Lockwood & Kunda, 1997) that found that outstanding role models had a deflating influence on participants' self views when role models' accomplishments were impossible to attain.

Collectively, these studies showed that when a role model's message was matched to their audience's motivational focus, the role model was effective. A role model with identical accomplishments, but who failed to speak to his or her audience's focus, did not lead to increased motivation (and even led to decreased motivation in Study 6).

This thesis contributes to the literature on goal stages by empirically assessing whether people's motivational focus differs as a function of goal stage. Studies 1a and 1b were designed to directly test whether beginners are more focused on issues of expectancy (e.g., "Can I do it") whereas maintainers are more focused on issues of goal value (e.g., "Is it worth it?"). This finding has implications for understanding the determinants of people's motivation more broadly. For instance, many classic motivational theories stress that motivation is both a function of expectancy and value. Such theories (e.g., Atkinson, 1957; Feather, 1982; Vroom, 1965) posit that people's level of motivation results from how likely they believe they are to eventually achieve the goal multiplied by how important it is for them to achieve the goal. Hence, these influential theories implicitly convey that expectancy and value are typically weighted equally.

The studies I report add to our understanding of the expectancy and value constructs. Specifically, the present research shows that people more heavily focus on expectancy information when they are beginning a goal and that they more heavily focus on value information when they are maintaining a goal. Therefore, this thesis highlights that goal stage can be a critical factor in understanding the role that expectancy and value play in determining motivation.

My findings—that goal stage determines whether expectancy or value is more prioritized—could be seen as conflicting with the wealth of studies from the expectancy by value tradition, which find that expectancy and value information are equally weighted (and multiplied) to determine motivation (for other exceptions, see Kruglanski et al., 2002; Shah & Higgins, 1997; Zhang & Huang, 2010). One reason that previous

expectancy by value research has not typically found that expectancy and value receive differential preference could be that at some goal stages, expectancy and value *are* equally in focus for goal pursuers. I examined people who were beginning a goal or who were maintaining a goal. However, an entirely distinct goal stage is the *goal setting stage*—that is, when people are still debating on whether or not to pursue a goal, or when people are choosing among alternative goals. As I develop below, past research suggests that expectancy and value will both be salient in the goal setting stage.

Many theoretical models discuss the goal setting stage. Notably, Heckhausen & Gollwitzer's (1987) Rubicon Model of Action Phases delineate four phases of goal pursuit. People who are in the goal setting stage are said to be “predecisional”—that is, people are actively deciding whether or not to pursue a goal, or are deciding to pursue one goal versus another goal. According to the Rubicon Model, in this stage of motivation, people consider the goal's feasibility (expectancy) and desirability (value) so that they can narrow down most effectively what goal they would like to pursue (Gollwitzer, 2012). However, when one's goal pursuit is underway (i.e., for beginners and maintainers, as examined in this thesis), and the Rubicon has been crossed, classic expectancy by value theories are no longer the best explanation for the psychological processes involved in goal pursuit (Gollwitzer, 1990, 2012). Rather, starting or executing goal-directed behaviors requires people to plan how they intend to pursue a goal, or how they are faring at their goal pursuit. Although Gollwitzer (2012) states that once crossing the Rubicon (i.e., after deciding on a given goal), “feasibility-related and desirability-related issues should no longer matter” (529), it seems possible that based on the findings of this thesis, people may still be sensitive to expectancy and value information during

pursuit. Indeed, I would argue that to help with the task of getting goal pursuit underway (e.g., for beginners), one must be cognizant of whether or not one has the skills and capabilities to coordinate goal actions.

The current set of studies, as well as research on by The Rubicon Model and other theories of goal pursuit (e.g., Liberman & Trope, 1998) underscore that goal stage is a critical determinant of when expectancy and value information will receive equal preference, and when expectancy *or* value will dominate people's motivational focus. In doing so, this thesis adds some nuance to classic expectancy by value theories and is a direct test of how the motivational focus of beginners and maintainers differs.

When do Role Models Motivate, Demotivate, or Have No Effect?

People are frequently exposed to successful others; however, it is not always clear when and how role models affect motivation. In this section I briefly review how the idea tested in this thesis—namely that role models must speak to people's stage-specific motivational focus—can help clarify previous role model research, and how it can generate new research directions.

Past research. The framework that I have outlined here is similar to research by Lockwood et al. (2012). Lockwood showed that people were more motivated when a role model matched (vs. did not match) their underlying regulatory orientation. Similarly, I argued that people's motivational focus in general could dictate what type of role model was most inspiring (i.e., an expectancy or value role model). Although both frameworks highlight the critical role of matching role model messaging to the audience's motivational orientation or focus, the two lines of work also have some important differences. Whereas Lockwood and colleagues underscored that very different role

models will best align with the concerns of people's regulatory orientation (for example, by showing a student who was wildly successful vs. a student who was an abject failure), the role models used in my thesis demonstrate that even the *same* role model can speak to people using distinct language that will address their motivational focus. In addition to showing that the same role model can speak to different people's motivational focus, this thesis shows that the idea of fit between a role model and their audience extends beyond a motivational focus that stems from regulatory focus theory. Indeed, I believe that this framework can also help explain some past role model research.

Research by Hoyt (2012) showed that female participants were demotivated to complete a leadership task after seeing an outstanding female-leader role model—but only when the participants were low in leadership self-efficacy. Women with low leadership self-efficacy were—like beginners—concerned with the question “Can I do it?” Seeing a high level of performance in a role model likely spoke *against* low self-efficacy participants' concerns, hence leading to decreased motivation. Perhaps if the high performing role models framed their lofty accomplishments by using expectancy language, as in the studies presented here, the elite female-leader role models might have been more inspiring.

Future research. Matching motivational concerns with a role model's message can also point to exciting new directions in crafting effective role models. Based on a variety of distinct research programs, we know that in addition to goal stage, people's motivational concerns vary based on: whether they are “locomotors,” who are most concerned with movement from goal-to-goal versus “assessors,” who are most concerned with making the right choices (Kruglanski et al., 2000); whether they are high versus low

on the desire to really think through problems, including goal-related problems (Webster & Kruglanski, 1994); or whether people are focusing on what they have accomplished to-date, versus what they have left to accomplish (e.g., Fishbach, Koo, & Finkelstein, 2014). This type of information can be used to craft different role models that should be more or less likely to inspire different audiences.

As one example, knowing that one's audience is high in assessment, a role model who highlights his or her accomplishments resulting from careful consideration of how to pursue the goal (e.g., "I started studying Psychology, but after carefully weighing out all of the options, and thoughtfully trying out two other majors, I decided to pursue a Biology major") should result in motivation. In contrast, a role model who highlights movement from step to step (e.g., "I started by studying Psychology, but then switched my major two times before landing on a Biology major"), ending in the same accomplishment, should not result in motivation. Hence, future research should test the generality of the motivational focus matching I have studied here. I believe that doing so will result in several exciting possibilities in terms of how to craft effective role models.

Additional Contributions to Role Model Literature: Many Shades of Relevance

One key contribution of this thesis to the literature examining role models is the notion of what it means to be a relevant role model. It has long been acknowledged that relevance of the role model will determine whether or not people make a comparison (e.g., Collins, 1996; Lockwood & Kunda, 1997; Tesser, 1988). For instance, if a role model is making strides in a domain that is irrelevant to one's own goals (for instance, an aspiring accountant who sees an outstanding teacher), then the role model is not going to have any influence on one's self-views or motivation (Lockwood & Kunda, 1997).

Hence, early work on relevance suggested that role models will be relevant to the extent that they are achieving in a relevant (vs. irrelevant) goal domain.

The studies presented here compared two role models who were both achieving in a relevant domain; indeed, I took care to ensure that both role model's accomplishments were equivalent, and in no study was one role model perceived as more accomplished than the other. Hence, based on prior work, one might have predicted that both role models would be equally motivating because they are both domain relevant. As I found, however, relevance can be a more nuanced construct than previous research might have suggested.

Future research could examine how other types of relevance lead to more (vs. less) effective role models. For example, the timeframe of a role model's accomplishments might make the role model more or less relevant. Given that increased amounts of time are associated with greater amounts of psychological distance (Trope & Liberman, 2010), an up-and-coming athlete might see an Olympian from 10 years ago as irrelevant to his or her sport. Investigating how role models can be (ir)relevant in greater depth would likely build on the pioneering work of domain relevance in determining role model effectiveness.

Strengths and Limitations of Current Studies

As with any research program, the studies presented here had both strengths and limitations. The effects were robust across multiple operationalizations of goal stage, including a goal stage manipulation. I also operationalized role models who conveyed either expectancy- or value-related information in four distinct ways, with results showing similar patterns regardless of operationalization. In addition to assessing

behavioral intentions using two distinct measures (the behavioral intentions measure adapted from Lockwood et al., (2002) as well as the plans for an upcoming weekend measure in Study 6), I also obtained evidence that role models influence motivation over time by following up with participants a week after participation to obtain self-reported measures of behavioral change (Study 5). The studies investigated the use of role models for both undergraduate and community samples.

Despite the strengths of this research, limitations should be acknowledged. A primary limitation was that most of the studies relied on self-report measures of behavioral intentions. Having actual measures of behavior would be a gold standard that role model researchers would be wise to collect. For example, does seeing a focus-matched role model lead people to engage in lengthier and more vigorous workouts? Although Study 5's follow-up data suggest that people's behavior increased consistent with their intentions, the measure still relied on people's self-reports.

Although we know that intentions do not always perfectly align with behavior (e.g., Sheeran, 2002), the types of self-report measures I used generally show a reliable, if sometimes modest, relation to behavior. Indeed, many theories of motivation place great importance on intentions in predicting behavior (e.g., Ajzen, 1991), and research that examines the intention-behavior gap shows that a moderate, but not insignificant, 28% of variance in behavior is statistically accounted for by intentions (Sheeran, 2002; see also Rhodes & Dickau, 2012). Furthermore, recent research has included a mix of self-reports of motivation as well as behavioral evidence of the effectiveness of role models (e.g., Hoyt, 2012); in this work, behavioral evidence is strongly related to self-report measures.

This type of finding suggests that (a) role models can influence actual behavior and (b) intentions measures are indicative of actual behavior at least some of the time.

Another limitation of the present work was that across studies, expectancy role models were arguably more focused on expectancy concerns typical of a beginner rather than expectancy concerns that might be more typical of a maintainer. Put another way, it seems possible that maintainers could be focused on expectancy issues about their ability to maintain their goal (although Study 1's open-ended thought listing results suggest that issues about expectancy in general are less dominant in the thoughts of maintainers vs. beginners). Given that I did not design a role model who directly speaks to the expectancy concerns of a maintainer, the results for maintainers across Studies 2 - 5 must be interpreted with some caution. Although the difference in behavioral intentions for maintainers who saw either an expectancy or a value role model was not one of the critical contrasts that I had predicted, the studies that I designed are not the strongest test of whether, under some conditions, an expectancy-focused role model might be as motivating (or more motivating) than a value-focused role model for maintainers. Future research should more directly test whether maintainers could find a role model who is focused on his or her ability to maintain his or her goal motivationally relevant, and hence inspiring. If maintainers are truly focused on a unique type of expectancy information, then it seems possible that a role model could be developed to speak to this unique motivational focus.

The present work focused mostly on one goal domain. I chose to primarily examine a goal domain that is consequential, and in which role models are frequently used as sources of motivation—the domain of fitness. Future research is needed to assess

whether the effects of expectancy- versus value-focused role models differentially motivate beginners and maintainers in other important goal domains. For example, it would be useful to test whether similar patterns would be found comparing the effects of different types of role models on people who are just beginning to save versus those who have been maintaining a comfortable saving profile.

Relatedly, the results of Study 6 suggest that role models may operate differently as a function of the “type” of goal that their audience is pursuing. Specifically, people who have been maintaining a goal pursuit for an extended period of time might have different concerns if their goal has a clear endpoint (such as an academic degree), than if the goal lacks a defined endpoint (such as fitness goals). For instance, Huang & Zhang (2011) argue that people who are nearing completion of a goal are most concerned with the question “When will I get there?” Information conveyed by a role model about a goal’s value, then, may fail to address this pressing question (although see Zhang & Huang, 2010). This may explain why neither the expectancy nor the value-focused role model enhanced motivation for goal maintainers in Study 6.

Based on this preliminary evidence of a potential boundary condition, it will be important for future research to examine how goal domain and characteristics of the goal might modify the findings presented here. For example, it might be possible to shift people’s perceptions of goal pursuit so that participants feel as though they are pursuing a goal with a clear end point (e.g., “Losing 15 pounds”) vs. a maintenance goal (e.g., “Losing, and keeping off, 15 pounds”). I predict that for people who are advanced (i.e., maintainers, or advanced pursuers), value role models will be more motivating when the goal is framed as a maintenance goal (vs. a goal with a clear end point).

Another limitation of the present studies is that in most of the studies (except Study 3) I measured goal stage. Hence, the findings have a correlational aspect. Because my predictions were only about the interaction with a manipulated variable (i.e., role model type), I am confident that there can be no reverse-causality arguments (e.g., people are just more motivated when they are maintaining a goal). However, it would be worthwhile to get clearer evidence that motivation results from different role models when directly manipulating a person's goal-related concerns. In Study 3 I attempted to manipulate goal stage; however, the results were somewhat inconsistent with other studies. Specifically, one contrast that was most prominent in Studies 2, 4, 5, and 6 was the difference between an expectancy-focused and value-focused role model for beginners. This distinction did not emerge when goal stage was manipulated. As Study 3's discussion highlighted, there were some potential limitations of the manipulation itself, and other ways of manipulating goal stage should be addressed in future research.

Future researchers would also be wise to examine whether it is possible to directly manipulate participants' motivational focus. Rather than manipulating goal stage, manipulating a participant's motivational focus (i.e., manipulating whether people are focused on expectancy versus value) would allow stronger causal claims regarding the importance of a role model's message matching an audience's motivational focus. I believe that directly manipulating participants' motivational focus should produce similar effects on motivation in response to seeing either an expectancy or value role model: Role models who address the concerns of their audience will be most motivating.

Another issue related to the measurement of goal stage is that in Studies 1, 2, and 5, I included participants who indicated their goal stage as 1 = *I currently do not exercise*

and I do not intend to start exercising. It could be argued that these people are neither beginners nor maintainers. However, as I outlined in Study 1's discussion, there is reason to believe that these participants actually did have some type of exercise goal and were not obviously different from participants who clearly identified as beginners.

Furthermore, although the regression model in Studies 2 and 5 was based on the full 4-point scale, the critical contrasts that tested my main predictions were focused on people who were +1 or -1SD, which corresponded most closely to the scale points 2 and 4—unambiguous beginners and maintainers. I am confident that retaining this small minority of participants (3.23%, 7.60%, 3.64%, and 3.30% of participants in Studies 1a, 1b, 2, and 5, respectively) did not meaningfully change the interpretation of the results.¹⁷

Furthermore, the same general pattern of results was replicated across three other studies that were not subject to this potential measurement limitation (Study 3 manipulated, rather than measured, goal stage, and Studies 4 and 6 selected participants who were unambiguous beginners or maintainers).

A final limitation that I will note is the lack of an empirically tested mechanism. In the next section, I outline some possible mechanisms that could be responsible for understanding how role models' outstanding accomplishments translate to audience motivation more generally.

¹⁷ Additional follow up analyses revealed that overall, excluding participants who indicated that they currently did not exercise and did not intend to start exercising revealed the same pattern of results, although the significance levels did change slightly. Specifically, in Study 1a goal stage continued to significantly predict all outcomes with the exception that goal stage now marginally predicted open-ended value thoughts in Study 1a, $t(113) = 1.93, p = .056$. In Study 2, the interaction between goal stage and role model type for behavioral intentions dropped to non-significance, $t(102) = .83, p = .41$; However, an additional measure of motivation (see footnote 8) revealed the predicted (marginally significant) interaction, $t(102) = 1.53, p = .13$. In Study 5, the interaction for the measure of behavioral intentions at T1 also dropped to marginal significance, $F_{change}(171) = 2.16, p = .119$. Finally, the interaction for perceived behavioral change, assessed one week after participation, showed the same significant pattern.

Future Directions: Mechanisms Underlying Role Model Effectiveness

Fit. I have argued that role models increase others' motivation due to a general sense of fit between a role model's message and an audience's motivational concerns. Although this idea of fit is supported by previous research (e.g., Higgins, 2000; Lockwood et al., 2002), there are many questions left to answer regarding exactly how the fit translates to increased audience motivation.

One possibility as to how fit translates to increased motivation is that people might more strongly engage with the role model's message (if the role model speaks to the audience's concerns). This is similar to the mechanism argued to underlie regulatory fit (Cesario et al., 2008, Higgins, 2000), in which people become more engaged with their goal pursuit to the extent that a message fits with their underlying regulatory orientation (e.g., promotion-focused people become more engaged with their goal pursuit when there is a fit between their promotion focus and a eagerly framed message). People become more engaged with the message (and their goal pursuit), according to regulatory fit theory, because matched messages sustain the preferred *strategies* of individuals. In the words of regulatory fit theory, people "feel right" about a message that matches their regulatory orientation.

Another possibility is that the role model's message might satisfy some psychological need. As Cesario et al. (2008) argue, the main difference between regulatory fit theory and other fit theories (e.g., Fabrigar & Petty, 1999) is that in regulatory fit theory, it is the *strategies* an individual uses that sustains their engagement with goal pursuit. In contrast, other theories of fit suggest that messages are more

engaging when an outcome per se is satisfied (e.g., if a person has a need for cognition, cognitive (vs. affective) messages will better satisfy that need: Fabrigar & Petty, 1999).

The conceptualization of motivational focus examined in this thesis is likely more closely aligned with satisfying a psychological need rather than sustaining the preferred strategies of beginners and maintainers. For instance, beginners' needs might include understanding whether they have the skills and resources to pursue a goal, and a role model who highlights expectancy information can best address this need. Of course, role models can also provide people with strategic advice on how to pursue a goal (Lockwood et al., 2002). Indeed, the role models in the present thesis may have provided participants with strategic advice on how to pursue their goal—for instance, by the role model discussing his or her roadmap to success.

In subsequent research, it would be interesting to test whether the different ways that fit can materialize influences the effectiveness of role models, by directly pitting role models who speak to *strategies* that fit with individual characteristics against *outcomes* that fit with individual characteristics. As an example, fitness maintainers might be motivated by a focus on outcomes (e.g., looking good naked) or a focus on the specific strategies to pursue the goal (e.g., by making exercise a part of one's daily routine). Role models could focus on the outcome (e.g., "I'm so pleased with my results") or on how the outcome gets achieved (e.g., "I go to the gym every morning to guarantee it happens each day"). I predict that a person who is heavily focused on fitness strategies would not show increased motivation after seeing a role model who is only considering the outcomes, but would be motivated by a strategy-focused role model. This possibility remains for future research.

Goal contagion. Another mechanism that could help explain the effects observed in this thesis comes from the goal contagion literature. Research on goal contagion has shown that people can spontaneously “catch” another person’s goal.

For instance, reading a scenario that implied an actor had the goal to earn money (vs. did not have that goal) led participants to work harder towards a task that increased their own likelihood of earning money (Aarts et al., 2004). Although subsequent studies on goal contagion have examined different moderators of the effect—for example, examining ingroup vs. outgroup actors (Loersch, Aarts, Keith Payne, & Jefferis, 2008)—no studies to my knowledge have examined actors who are role models as defined here.

Goal contagion may be inferred using several distinct measures (e.g., actual behavior, Aarts et al., 2004). One common strategy to assess goal contagion is by using goal accessibility measures. Leander, Shah, and Chartrand (2011) assessed goal contagion by having participants sort words into either a social or an academic category. Critically, some words were ambiguous and could describe either social or academic goals (e.g., email). Goal contagion was assessed by how many ambiguous words were categorized as academic (vs. social), which indicated that goal contagion for an academic goal had occurred. Using similar logic, it should be possible to examine whether role models who speak to their audience’s motivational concerns cause the audience to automatically catch the role model’s goal, as in goal contagion research. If measures of goal accessibility, typical of goal contagion studies, align with the behavioral intentions measures used in this thesis, it would not only add a better understanding of how role models have their effects (i.e., mechanism) but would also provide a critical moderator to

predict when goal contagion is likely to occur—i.e., when actors (in this case role models) speak to audience’s motivational concerns.

Shared reality. Finally, *shared reality*—the process of sharing an internal state (e.g., belief) with another person (e.g., Hardin & Higgins, 1996)—might provide meaningful insights into how role models have their effects. Higgins and colleagues argue that people are motivated to create a shared reality with other people for two reasons: *epistemic* (i.e., truth-seeking) and *relational* motives. Having someone else share one’s mental representations can validate those representations (Echterhoff, Higgins, & Groll, 2005; Echterhoff, Higgins, & Levine, 2009; Hardin & Higgins, 1996; Higgins, 2008). Sharing reality with another person can also foster the trust in others that leads to relationship building (Echterhoff et al., 2005; Hardin & Higgins, 1996; Holmes & Rempel, 1989).

Role models might be the perfect people with whom to share reality. That is, because role models are perceived as respected experts in their goal domain, they might be well positioned to satisfy both epistemic and relational motives that cause people to share reality. This motivation to share reality with a role model might lead people to tune, or adjust, their inner states to be more in line with those of the role model’s—but only when the role model speaks to the audience’s motivational focus. In other words, people will be motivated to share reality with role models who share (vs. do not share) their motivational focus, because those role models may be better able to satisfy one’s epistemic uncertainties (Hardin & Higgins, 1996). For example, if Jen is just beginning an exercise goal, she may desire to share reality with a role model who highlights expectancy information (rather than value information). Her desire to share reality might

cause her to adopt beliefs that are consistent with the role model's (e.g., that exercise is compatible with a busy lifestyle). These beliefs should then guide behavior (Bandura, 1986; Dweck, Chiu., & Hong, 1995). Hence, the findings presented here may come about because of a chain reaction starting with people desiring to share reality with the role model. This exciting avenue for research remains to be tested.

Conclusion

Role models are used in a variety of settings to help people accomplish their goals. This thesis provides insight into when role models are most effective by examining both role model features (i.e., whether accomplishments highlighted expectancy or value information), and audience features (i.e., audience motivational focus stemming from goal stage). To the extent that a role model speaks to his or her audience's motivational focus, the audience will be motivated. This research enriches our understanding of how social influences can affect personal goal pursuit.

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Appendix A

Questionnaire assessing participants' focus on expectancy and value information, designed for the purposes of this dissertation (Study 1). Note question presentation was randomized for each participant.

Please indicate the extent to which the following statements describe your current thoughts, concerns, and feelings about your exercise goals. There are no right or wrong answers.

Not at all characteristic of my thoughts					Extremely characteristic of my thoughts
1	2	3	4	5	
					I am not very confident that I can pursue this goal with a high degree of success
					I wish I knew whether I have what it takes to be successful in my exercise goals
					I am 100% certain that I have the ability to meet my exercise goals
					Whether or not I have the ability to do well at my exercise goals is a pressing issue
					When I go to exercise, I wonder "can I do this?"
					I think about whether or not I will be able to engage in my exercise goals
					I am concerned with whether or not i have what it takes to pursue my exercise goals
					I am dedicated to my exercise goals
					Being successful at my exercise goals is something I strongly value
					I am certain as to how much I value my exercise goals
					I do not know how I would prioritize my exercise goals relative to my other goals.
					When I go to exercise, I think of reasons why exercising is important to me
					I think about why I value my exercise goals
					I think often about why exercising is worthwhile

Appendix B

Role model manipulations, including expectancy and value focused role models for Study 2 and Study 3. Role model gender was matched to participant gender.

Expectancy:



Hear What Our Members Are Saying:

"The Couch to 5K program taught me that **being a runner is important**. I started running 6 months ago, and I just completed a very successful half marathon! Running is so valuable for my life! I don't know what I would do if I couldn't run."

- Sarah Miller



It's too important to pass up!



Couch to 5K

Value:



Hear What Our Members Are Saying:

"The Couch to 5K program taught me that **being a runner is important**. I started running 6 months ago, and I just completed a very successful half marathon! Running is so valuable for my life! I don't know what I would do if I couldn't run."

- Scott Miller



It's too important to pass up!



Couch to 5K

Appendix C

Scale adapted from Lockwood, Jordan, & Kunda (2002) to assess behavioral intentions to exercise used in Studies 2 – 5.

Please answer the following questions about how you feel about your health or exercise goals right now

1 = *Not at all true*, 11 = *Very true*

I want to put more time into my exercise goals.

I plan to work harder at any exercise I do.

I am going to spend less time procrastinating when it is time to exercise.

I plan to put extra effort into my next workout.

I would like to keep up with my exercising.

I will procrastinate less when it comes to exercising.

I plan to start exercising more than I currently am.

I intend to spend more time at the gym/ running track.

I will try to stop engaging in activities that interfere with exercise and health.

I plan to avoid wasting time when it comes to exercising.

I will be more organized when it comes to exercising.

I will try to avoid obstacles to maintaining my physical health.

I am going to be less casual about my fitness and health.

I want to focus more on my exercise, health and fitness.

Appendix D

Role model manipulations, including expectancy and value focused role models for Study 5.

[Expectancy role model]

Allison discovers working out is doable

Monday, October 05, 2013 by Dynamic Gym

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Although growing up I was quite active, once I got to university, I didn't know if I was capable of keeping up regular exercise. I moved away from home and became very inactive. On top of the inactivity, the food choices I made were horrible. I gained 25lbs in the first semester, I was out of control and did not know whether I could do anything about it.

By my second year I had gained even more weight and was completely out of shape. I was at the mall feeling good about myself. I had on makeup, I was dressed nice and my hair was done. Then I walked by a window and saw my reflection. The reflection did not look at all like how I felt inside. I was out of shape, who was I kidding.

This realization pushed me to think about how I might go about exercising. I signed up for a membership at a Dynamic Gym that was about to open—I just had to believe I could do it. I had been to the gym before in high school on and off. I would go regularly for a few weeks and then skip a few. I would let other aspects of my life dictate whether or not I could keep up my workouts. When life got busy and my stress levels increased I didn't know how to stay at it. I didn't know how on earth I would be able to figure out how to exercise regularly, or even how to do all of the exercises I needed to do, but I decided to join Dynamic Gym anyway. They gave me a

tour, talked about logistics of exercising, and my past experience. I knew I would be able to do this.

Dynamic gym even recommended a free website that went over how to exercise and how to properly balance my nutrition, which helped me realize just having some basic know-how was all I needed to keep exercising consistently.

The first workout was tough. I felt that I couldn't do any of the movements right. However, I think that everyone feels that way sometimes. The more I went, the more I learned how to do the exercises, by seeing others, by looking at online resources, and by just asking gym staff.

By the holiday season I had lost 15lbs and I was feeling great. My energy level was back and I was swimming in the morning and spinning in the evening. This is where my know-how of exercise and nutrition came into play. I was thinking I had my lifestyle under control then I went home for two weeks over the holidays and gained a few pounds. I really think if I wasn't confident in my ability to exercise—confidence gained over the previous six months—I may have given up right there. I am glad that I had that test and I am glad that I had the tools in place to continue with my regular exercise. I just kept believing that I could do it!

I am proud to say that I am meeting and exceeding my expectations for what I can do in terms of exercise. My exercise regime is challenging, but I'm learning how to do new exercises one at a time. I'm doing exercises I never dreamed I could do! It's great to finally feel like regular exercise is attainable.

Thanks to my experience at Dynamic Gym I know I can succeed. It requires hard work and a belief that I can do it. Working out has become a part of my lifestyle. It is no longer the first thing to go when life gets hectic. When stress increases I head out for a run or a session at the gym to clear my head. I now know that I can take the actions required to coordinate an exercise program. This can be a daunting task for anyone. I am living proof that regular and consistent exercise is something that almost anyone can do.



[Value role model]

Allison makes working out a priority

Monday, October 05, 2013 by Dynamic Gym

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Although growing up I was quite active, once I got to university, I didn't know if exercising regularly was worth all of the time—does consistent exercise really pay off? I moved away from home and became very inactive. On top of the inactivity, the food choices I made were horrible. I gained 25lbs in the first semester; I was out of control and did not pay any attention to it.

By my second year I had gained even more weight and was completely out of shape. I was at the mall feeling good about myself. I had on makeup, I was dressed nice and my hair was done. Then I walked by a window and saw my reflection. The reflection did not look at all like how I felt inside. I was out of shape, who was I kidding.

This realization pushed me to think about how important exercise really is. I signed up for a membership at a Dynamic Gym that was about to open—it was too important to ignore. I had been to the gym before in high school on and off. I would go regularly for a few weeks and then skip a few. I would let other aspects of my life dictate if I had time to go work out. When life got busy and my stress levels increased the gym would be one of the first things to go. I knew I could do it, I just wasn't sure it was worth all of the effort, and although I still didn't know if I could be committed to exercising, I joined Dynamic Gym anyway. They gave me a tour, talked about why I wanted to join, and my goals. I knew this was worthwhile—I needed this.



Dynamic gym even recommended a free website that went over exercise and nutrition goals, which helped me realize how important each component was in order to be successful and reach the valuable, but difficult, goal of consistent exercise.

The first workout was tough. I didn't yet know if the pain would be worth the gain. However, I think that everyone feels that way sometimes. The more I went, the more I believed that exercising was truly a worthwhile endeavour that I valued. It became a part of who I am.



By the holiday season I had lost 15lbs and I was feeling great. My energy level was back and I was swimming in the morning and spinning in the evening. This is where my commitment and dedication to exercise was a huge



benefactor. I was thinking I had my lifestyle under control then I went home for two weeks over the holidays and gained a few pounds. I really think if I wasn't devoted to exercise I may have lost everything right there. I am glad that I had that test and I am glad that I had the dedication and values to continue with my regular exercise. I just kept reminding myself of the importance.

I am proud to say that I couldn't be more committed to exercising. My exercise regime is challenging, but I've managed to stay focused on why I do it. I'm doing exercises I never dreamed of! It's great to finally feel like hard work pays off.

Thanks to my experience at Dynamic Gym I know exercise matters. It has been the best decision I've ever made and is totally worth the time and energy. Working out has become a part of who I am. It is no longer the first thing to go when life gets hectic. When stress increases I head out for a run or a session at the gym to clear my head. I now know that I am committed to a healthy life style where exercise is a priority. This can be a daunting task for anyone. I am living proof that regular and consistent exercise pays off and is completely worth it.

Appendix E

Academic role model manipulations, including expectancy and value focused role models, as well as a no role model control article (Study 6).

Expectancy role model:



Former UW Students who believed They Could Do It

From an interest in the human mind to a career in Psychological Science

17:59 Nov 08, 2013 by Matt Lock, Staff Reporter

Each semester we will be writing a spotlight piece that looks at former University of Waterloo (UW) students who completed all of the steps to pursue their degree. Among the many students who have finished at UW is Jenna Moore, who majored in Psychology with a minor in Public Affairs. She is now working towards a graduate degree in Psychology, and believes that academics is something that anyone can do.

Jenna was born and raised in Toronto. She developed her interests in psychology during high school. "I always wanted to know how to best understand the human mind. I worked at my studies, and kept believing that I could put in the time and work towards completing my schooling."

"I think that believing my university goals were doable really propelled me to keep going in my undergraduate work," said Jenna. "But I like to do other things too. I like working out, and on the weekends, spending time out with friends. I also dabble in painting"

Jenna always tried to find ways to pursue her academics. As a UW student, she completed courses she at first wasn't sure she'd be able to complete, for example physiological psychology, advanced data analysis, and human resource management. Along with being a full-time student, Jenna managed to hold a part-time job, volunteered in a research lab, and at Planned Parenthood of Waterloo. During the summer, she also volunteered with a clinical psychologist at Grand River Hospital.

"I didn't know if I would be able to handle all of the courses, labs, and volunteer positions," says Jenna, "at the end of the day, I just had to believe that I could do it—when you believe that you are capable of buckling down at something you're going to get there."

Jenna thanks UW for making her believe that she could become a psychologist. "In my first year at UW, I was unsure of how to take all the necessary steps to get to a career. But after guidance of faculty and graduate students, as well as information at career services, I knew that I could become a psychologist."

In terms of advice for current UW students, Jenna says "Make sure to remind yourself that you *can* get there, whatever major you are in! If you give yourself time and put in the effort, you really can do anything"

-- Matt Lock's column will appear every semester

Former UW Students who Believed It Was Worth It A valued career in Psychological Science

17:59 Nov 08, 2013 by Matt Lock, Staff Reporter

Each semester we will be writing a spotlight piece that looks at former University of Waterloo (UW) students who showed dedication to their degrees. Among the many UW students who have finished their degree is Jack Moore, who majored in Psychology with a minor in Public Affairs. He is now working on a graduate degree in Psychology, and believes that academics is extremely important.

Jack was born and raised in Toronto. His commitment to psychology began during high school. "I always valued understanding the human mind. During my studies, I kept in mind how important my schooling is to me."

"I think that believing my university goals were important and worthwhile really kept me dedicated in my undergraduate work," said Jack "But I like to do other things too. I like working out, and on the weekends, spending time out with friends. I also dabble in painting"

Academics has always been important to Jack. As a UW student, he completed courses he at first wasn't sure would be worth all of the effort, for example physiological psychology, advanced data analysis, and human resource management. Along with being a full-time student, Jack managed to hold a part-time job, volunteered in a research lab, and at planned parenthood of Waterloo. During the summers, he also volunteered with a clinical psychologist at Grand River Hospital.

"I didn't know if all of the courses, labs, and volunteer positions would pay off," says Jack, "at the end of the day, I just had to believe that it would all be worth it—when you are dedicated to something you are going to succeed."

Jack thanks UW for making him believe that being a psychologist would be worth the effort. "In my first year at UW, I was unsure of what I most wanted to do. But after seeing the commitment of the faculty and graduate students, I knew that becoming a psychologist is completely worth the schooling and volunteering."

In terms of advice for current UW students, Jack says "Make sure to remind yourself that you value whatever major you are in! If it's important to you, and you know why you do it, you will succeed."

-- Matt Lock's column will appear every semester

New Tim Horton's to open in DC

Starbucks may also be coming to campus

17:59 Nov 08, 2013 by Matt Lock, Staff Reporter

A Tim Horton's Express will be opening in the Davis Centre in the next several weeks, raising the number of Tim's locations on the UW campus to five. UW Food Services (UWFS) director Lee Elkas said there is no immediate plan to add to that number, however, discussions are taking place about the addition of a Starbucks. "We're looking at Starbucks down the road to hit that niche market," Elkas said.

Food services will meet with plant ops next week to discuss final electrical and mechanical issues to be resolved, and the opening for the new Tim's should be "within the next few weeks," Elkas said. "This is [an] Express Tim's, which means it does not have the same offerings; [it] doesn't have bagels or ice caps. It has coffee and some pastry, and beverages," Elkas said. "It is a self-serve, so customers will be pouring their own coffee and milk or cream, then they will go to a central cashier to pay.

"We're going to play around with the hours for a bit to see the level of customers in that area," Elkas said. "We're not 100 per cent sure yet." He suggested students pay attention to food service's social media pages for updates on the location's hours.

The reason for the construction of the express is to help with current customer service issues and is based both on customer complaints of long line-ups as well as employee observations. Elkas said that a concern has been for the workload on staff adding, "It's one of the most challenging places for part-time students and full-time staff to work."

Regarding the possibility of adding a Tim Horton's Express in the SLC, Elkas said, "Our issue there is space. "It depends on who is occupying the space on the ground floor [of the SLC]." Elkas said. Discussions of expanding the South Campus Hall Tim Horton's are also taking place in the near future.

Construction began this past July in conjunction with some upgrades to the Media Doc Centre. According to Elkas, Media Doc had more space than was needed, so the new Tim Horton's will take over some of that excess space.

-- Matt Lock's column will appear every semester

Appendix F

Questionnaire assessing participant's behavioral intentions to pursue their academic goals (Lockwood, Jordan, & Kunda, 2002).

Please answer the following questions about how you feel about your academic goals right now.

1 = Not at all true, 11 = Very true

I want to put more time into my schoolwork.

I plan to study harder for tests and exams.

I am going to spend less time partying with friends.

I plan to put extra effort into the rest of my term papers.

I would like to keep up with reading assignments.

I will procrastinate less.

I plan to start studying for finals before the term ends.

I intend to spend more time at the library.

I will try to stop engaging in social activities that interfere with schoolwork.

I plan to avoid wasting time.

I will be more organized.

I will try to avoid missing work deadlines.

I am going to be less casual about schoolwork.

I want to focus more on my studies.