The Effects of Talented and Hardworking Role Models on Motivation

by

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Abstract

Previous research on motivation by role models has not examined how the source of a role model’s success might influence motivation. In Studies 1 and 2 participants were asked to estimate their motivation in response to role models. In Study 3 role models were provided and behavioural intentions were assessed. The results of these first three studies indicate that both talented and hardworking role models are motivating, but that they motivate different things: Talented role models motivate people to access their talents, and hardworking role models motivate people to work hard. Having established that both types of role models can activate motivation, implicit theories orientation was examined as a possible moderator of the effect. In Study 4 participants completed an implicit theories induction task before reading about a role model. There were no differences observed between the entity and incremental conditions. In Study 5 entity and incremental theorists were recruited and exposed to a role model. Incremental theorists who had read about a hardworking role model were motivated to work hard.
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# Table of Contents

## Contents

Acknowledgments .......................................................................................................................... iii

Table of Contents ........................................................................................................................ iv

List of Appendices ....................................................................................................................... viii

Social Comparison and Motivation ................................................................................................ 1

1 Social Comparison ..................................................................................................................... 1

1.1 Social Comparison and Motivation .................................................................................... 4

1.2 Characteristics of Comparison Targets ............................................................................. 7

1.3 Talent and Effort ................................................................................................................. 8

2 Implicit Theories ...................................................................................................................... 11

2.1 Implicit Theories and Motivation ..................................................................................... 13

3 Research Overview .................................................................................................................. 17

4 Study 1 ..................................................................................................................................... 19

4.1 Method .............................................................................................................................. 20

4.1.1 Participants ............................................................................................................ 20

4.1.2 Procedure .............................................................................................................. 20

4.2 Results and Discussion ..................................................................................................... 21

5 Study 2 ..................................................................................................................................... 24

5.1 Method .............................................................................................................................. 25

5.1.1 Participants ............................................................................................................ 25

5.1.2 Procedure .............................................................................................................. 25

5.2 Results and Discussion ..................................................................................................... 26

6 Study 3 ..................................................................................................................................... 28
9.2.4 Behavioural Intentions and Behaviour ................................................................. 61

9.3 Practical Implications .............................................................................................. 62

References ..................................................................................................................... 64

Appendix A – Study 2 Role Model Profiles ................................................................. 74

1 Hard work condition ............................................................................................... 74

1.1 Hardworking role model #1 ............................................................................... 74

1.2 Hardworking role model #2 ............................................................................... 74

1.3 Hardworking role model #3 ............................................................................... 74

1.4 Hardworking role model #4 ............................................................................... 75

2 Talent condition ...................................................................................................... 75

2.1 Talented role model #1 ...................................................................................... 75

2.2 Talented role model #2 ...................................................................................... 75

2.3 Talented role model #3 ...................................................................................... 76

2.4 Talented role model #4 ...................................................................................... 76

Appendix B – Study 3 Role Model Profiles ................................................................. 77

1 Talent ....................................................................................................................... 77

2 Effort ......................................................................................................................... 77

Appendix C – Study 4 Role Model Profiles ................................................................. 79

1 Talent ....................................................................................................................... 79

2 Effort ......................................................................................................................... 79

Appendix D – Study 5 Financial Role Model Profiles ................................................. 81

1 Hardworking role model profiles ........................................................................... 81

1.1 Informant #1 ....................................................................................................... 81

1.2 Informant #2 ....................................................................................................... 81

1.3 Informant #3 ....................................................................................................... 82

2 Talented role model profiles ................................................................................... 82
2.1 Informant #1 ...................................................................................................................... 82
2.2 Informant #2 ...................................................................................................................... 83
2.3 Informant #3 ...................................................................................................................... 83

Appendix E – Study 5 Academic Role Model Profiles ......................................................... 84

1 Hardworking role model profiles ...................................................................................... 84
   1.1 Informant #1 ...................................................................................................................... 84
   1.2 Informant #2 ...................................................................................................................... 84
   1.3 Informant #3 ...................................................................................................................... 85

2 Talented role model profiles ............................................................................................. 85
   2.1 Informant #1 ...................................................................................................................... 85
   2.2 Informant #2 ...................................................................................................................... 86
   2.3 Informant #3 ...................................................................................................................... 86
List of Appendices

Appendix A: Study 2 Role Model profiles.................................................................74
Appendix B: Study 3 Role Model profiles...............................................................77
Appendix C: Study 4 Role Model profiles...............................................................79
Appendix D: Study 5 Financial Role Model profiles.................................................81
Appendix E: Study 5 Academic Role Model profiles.............................................84
Social Comparison and Motivation

Imagine for a moment two friends, Tony and Maria, both of whom are very wealthy. Tony has earned his money though his talent for investing. All of Tony’s friends and colleagues remark on his talent for making money. His family says that Tony is a born money-maker, with a seemingly magic touch when it comes to making money grow. Maria has achieved a similar degree of financial success, but through hard work rather than any innate talent. She puts in long hours at work, tries hard to take advantage of any opportunity to make extra cash, and works hard at saving what she earns. Her friends and family say she is a hard worker who has put a lot of effort into acquiring her considerable wealth.

Tony and Maria are both very successful and financially well-off, and might be expected to function as role models: Outstanding exemplars who inspire other less successful individuals to self-improve. But whereas Tony has made money through his talents, Maria has acquired hers through hard work. They might certainly serve as role models for many individuals, but based on the available literature, it is unclear whether they would be equally likely to function as role models, and whether they would inspire similar behaviour changes among the less wealthy individuals exposed to them. In my dissertation, I have examined the extent to which exemplars of success through talent and success through effort can motivate others to pursue similar accomplishments.

1 Social Comparison

A large body of research has examined the impact of comparisons to better-off and worse-off others on the self. In his seminal Social Comparison Theory, Festinger originally argued that individuals seek out comparison information as a means of evaluating their own
standing, when more objective information is unavailable (Festinger, 1954). Since the publication of the original theory, much of the social comparison literature has focused on determining when comparisons will have a positive or negative impact on individuals’ self-evaluations and affect. In his influential Self-Evaluation Maintenance model, for example, Tesser (1988) argues that individuals will feel worse about themselves after they make comparisons to close superior others in self-relevant domains, but will bask in the reflected glory of a close other’s success in a non self-relevant domain. That is, individuals will feel inferior when a close other outperforms them— an upward comparison— when the domain of comparison is important to them. In contrast, when a close other outperforms them in a domain that is not important to the self, they can instead enjoy their close connection to the superior other without feeling that their own attributes fall short in contrast. In one study, for example, participants completed tasks said to be either highly relevant or irrelevant to their chosen career path. Upon hearing that a close friend had out-performed them on the irrelevant task, affect was more positive than when a stranger had outperformed them, or the friend had outperformed them on a relevant task (Tesser, Millar, & Moore, 1988). Being outperformed by a friend on an irrelevant task allows a degree of pride in the other’s accomplishments, whereas an outperforming stranger does not. In contrast, being outperformed by a friend on a relevant task has negative connotations for the self, because it indicates poor performance in an important domain.

Other researchers, however, have noted that individuals’ self-evaluations can be positively or negatively affected by superior others even in self-relevant domains. For example, individuals who construe the superior other as part of the self (Stapel & Koomen, 2000) may take pleasure in the other’s success; individuals are most likely to feel worse
about their own attributes when they have no connection to the superior other. In one study (Stapel & Koomen, 2000), for example, participants were told that they were completing a sentence memory task in which they read about either a highly successful or unsuccessful peer. Participants primed with an interdependent self-construal reported more positive predictions for a friend’s future performance on a task they themselves expected to perform. Participants primed with an interdependent self-construal—those whose interdependent self was most salient—presumably felt less of a need to defensively downplay the friend’s skills, because they could more easily integrate those advantageous features into their own self-concept (Stapel & Koomen, 2000). Thus, when a successful other is easily construed as part of the self, his or her success can improve the individual’s self-concept.

Social comparisons can therefore have either contrast or assimilation effects on the self. When individuals use the comparison target as a standard against which to evaluate their own abilities, focusing on differences between themselves and the target, contrast effects occur. In effect, contrast refers to the notion that “I am unlike this person.” When individuals contrast with the target, they feel worse after comparing to a superior other (“I am unlike this high achiever”) and better after comparing to an inferior other (“I am unlike this poor performer”). When individuals instead map themselves onto the other, focusing on similarities to the target, an assimilation effect occurs; when they assimilate to a target, the individual thinks “I am like this person.” When individuals assimilate to a target, they feel better after comparing to a superior other (“I am like this high achiever”), and worse after comparing to an inferior other (“I am like this poor performer”).
1.1  Social Comparison and Motivation

Although considerable research has examined the impact of upward comparisons on self-evaluations and affect, less is known about how such comparisons might affect motivation. The example set by a high-performing individual has the potential to influence not only individuals’ self-perceptions and affect, but also their self-improvement goals (Taylor & Lobel, 1989). Superior others have the potential to discourage comparers by highlighting present inferiority, but also to inspire them to work harder (Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet, Dumas, Monteil, & Genestoux, 2001; Lockwood & Kunda, 1997; 1999). The example set by individuals who have been successful in a particular domain can encourage others to improve their own level of success. Indeed, a superior other can reveal useful information about how to improve (Taylor & Lobel, 1989), providing a template of the behaviours that one should engage in if one is to achieve a similar level of success.

One classic study in the health domain demonstrates that upward social comparisons can be a source of inspiration. Whereas downward comparisons to less fortunate others might increase self-evaluations (Wills, 1981), there is evidence that cancer patients seek out comparisons to more fortunate others who are coping well with the disease (Taylor & Lobel, 1989). In a survey of cancer patients, respondents were asked whether they would prefer to interact with other patients who were either healthier or less healthy than themselves. Respondents strongly preferred to interact with other patients who were better off, and reported that these interactions would be most pleasant for them, relative to interactions with those who were sicker (Molleman, Pruyn, & Van Knippenberg, 1986). Better-off others can provide hope and inspiration to those facing the challenge of a serious illness. In one study
(Taylor et al. 1988), for example, individuals undergoing treatment for cancer reported that good copers and long-term survivors acted as role models on whom they could pattern their own coping and efforts to survive. In this case, cancer survivors are motivating because they represent highly desired alternative selves to those still struggling with the disease. In another survey (Taylor & Dakof, 1988), cancer patients were asked to assess the helpful actions of their fellow patients. Respondents reported that the most helpful action a peer could provide was to act as a good role model, presenting an example of effective coping. Upward comparisons may inspire positive health behaviours even among individuals not facing significant health challenges. In one set of studies, for example, both young and older adults were motivated by upward comparisons to peers in excellent health (Lockwood, Chasteen, & Wong, 2005). Taken together, these results indicate that upward comparisons are motivating because they illustrate the kind of success that can be achieved, as well as the means to achieving it.

A variety of studies in the academic domain also support the possibility that upward comparisons can have a motivating impact. In studies of school children, for example, students who reported making frequent comparisons between themselves and better-performing peers actually achieved higher grades (Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet, Dumas, Monteil, & Genestoux, 2001). Specifically, students were asked to name a peer with whom they frequently compared grades. The researchers noted that participants typically nominated a target who slightly out-performed them, and that these comparisons improved, rather than diminished, their academic self-concept. Their higher academic self-concept, in turn, fostered enhanced performance by promoting the expectation
that improvement is possible and effort is likely to pay off (Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet, Dumas, Monteil, & Genestoux, 2001).

A further study determined that whereas immersion in a high-achieving environment can be demoralizing, one-on-one comparisons with a target who only slightly outperforms the participant are more likely to be uplifting (Huguet et al., 2009). Studies of the Big Fish, Little Pond Effect (BFLPE) have demonstrated that immersion in an environment in which upward comparisons are chronically salient leads to negative consequences for the self-concept. BFLPE findings show that students in higher achieving schools tend to have lower academic self-concepts than other students with equal performance at low-achieving schools because they study in an environment of constant upward comparisons, making their own achievement seem less stellar (Huguet et al., 2009; Marsh, Kong, & Hau, 2000; Marsh & Parker, 1984). This effect is expected to lead to lower achievement in the long term (Marsh, Byrne, & Yeung, 1999). However, these negative effects are not observed in comparison situations where the students have the opportunity to nominate a single individual as their academic role model; instead, upward comparers in this situation tend to improve their academic standing over time (Huguet et al., 2009).

With the demonstration that upward comparisons can be motivating, a number of studies have attempted to uncover circumstances and factors which might make this positive outcome more likely. An upward comparison is most likely to have an inspirational impact when the superior target is perceived to be a role model, a representation of what the self can become in the future (Lockwood & Matthews, 2007). In one study, for instance, first year student participants were inspired by the example of an outstanding graduating student, indicating that they hoped to become more like this individual in the future (Lockwood &
Kunda, 1997); fourth year students, in contrast, did not experience this inspirational effect. The fourth year students were already at the end of their studies and would thus not have the opportunity to become like their same-age peer. Outperforming role models are therefore most likely to be motivating when their success seems attainable to the comparer.

In sum, there is strong evidence indicating that individuals can be motivated by a successful other, provided they view the other as an example of what they themselves might become in the future. In many of these studies, however, researchers have focused on the characteristics of the comparer (Collins, 1996; Corcoran & Mussweiler, 2009; Ensher & Murphy, 1997; Hegelson & Mickelson, 1995; Lockwood & Kunda, 1997; 1999) rather than the characteristics of the target. It is not clear that all successful targets will be equally motivating. An individual who has achieved wealth through financial savvy and an individual who has achieved wealth through hard work both represent financial success, but will not necessarily be equally motivating.

1.2 Characteristics of Comparison Targets

Although a variety of studies indicate that superior others can be inspiring, past research has not examined whether the source of the superior other’s success determines the impact of the comparison. To date, research has not examined whether the source of a role model’s success, specifically effort or talent, will determine whether or not the model is motivating, nor whether it will influence the kinds of motivation that the role model activates. In past studies examining the impact of upward comparisons, the relative contributions of talent and effort to the success of the superior other were not indicated (e.g., Brickman & Bulman, 1977; Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Lockwood & Kunda, 1997, 1999; Lockwood et al. 2004; Lockwood et al., 2005; Zell & Exline, 2010).
For example, in studies examining the impact of a successful student on his or her peers, participants read about the successful student’s achievements, but were not given any information on what factors allowed the student to accomplish those achievements (Lockwood & Kunda, 1997; 1999). Further, in studies examining the impact of real-life academic upward comparisons (e.g., Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet, Dumas, Monteil, & Genestoux, 2001; Marsh & Parker, 1984), the researchers did not assess participants’ perceptions regarding whether the superior others had achieved success through talent or effort. Thus, although these studies provide significant evidence indicating that upward comparisons can be motivating, it remains unclear whether the source of a role model’s success is important in determining the motivational outcome.

### 1.3 Talent and Effort

In many instances, an individual’s success might be the result of both talent and effort. That is, a person talented in a given area might increase their performance through effort; even the most talented musician or athlete likely works hard to maintain his or her high level of achievement. There is evidence, however, to indicate that these two constructs are indeed distinct in the minds of most people. In one study of implicit explanations of wealth, for example, people were asked to suggest reasons for a target’s financial success. Aspects such as an individual’s inborn traits or abilities (what the researchers called “family background factors”) were perceived to be distinct from individual effort aspects including hard work and saving (Forgas, Morris, & Furnham, 1982). In another study examining the effect of affluence on person perception, researchers found that the source of wealth does indeed influence the traits ascribed to an individual. People who acquired affluence via external means (such as inheritance) were perceived to be less conscientious and open to
experience than were people who acquired affluence via internal means, such as entrepreneurial efforts (Christopher, Morgan, Marek, Troisi, Jones, & Reinhart, 2005). This provides further evidence that individuals distinguish between talent and effort, demonstrating that although these factors may co-occur, lay people nevertheless perceive them as distinct from one another. In other words, people do distinguish between success resulting from effort, and from other more “endowed” causes.

Individuals also differentiate between success arising from talent and effort in the academic domain. In a study of self-fulfilling prophecies, teachers were asked to assess the extent to which their students were likely to succeed, and to generate explanations as to why that might be. The teachers often attributed success to natural intelligence or to hard work; further, talent and effort were indeed discrete constructs, and only marginally related (Jussim, 1989). Thus, although talent and hard work may often augment each other, or co-occur, they are nevertheless viewed as separate and distinct sources of personal success. In the present studies I examined talent and effort as separate causes for success in order to determine the degree to which each one might be motivating.

Although research to date has not examined the specific impact of role models who have achieved success through talent or effort, one recent study provides some evidence that success attributable to effort may be particularly motivating. Specifically, married individuals exposed to the example of a happily married couple experienced more positive affect when they believed that the couple put a lot of effort into their relationship (Buunk, 2006). When told that the happy couple put little effort into their relationship, participants actually experienced more negative affect than did those not exposed to a comparison relationship. Although this finding is consistent with the possibility that a role model’s
effectiveness may depend on the means through which success was achieved, the researchers did not directly compare the impact of success achieved through talent and effort. Moreover, because this study focused on affect rather than motivation as the outcome variable, it is unclear whether success arising from effort is particularly inspiring.

In sum, the literature on upward social comparisons and motivation has made no systematic examination of how the source of the role model’s success determines inspiration engendered by that model. For example, the literature to date does not distinguish between examples such as Tony, who has achieved wealth through his talent for making money, and Maria, who has achieved wealth through her conscientious hard work. The perceived influence of talent or effort, however, may be an important factor in determining the extent to which individuals are inspired by successful others. Indeed, the study of married couples described above (Buunk, 2006) indicates that individuals were more positively affected by successful couples who had worked hard at their marriage than by successful couples who had not worked hard at their marriage. Nevertheless, I predicted that both effort and talent models might activate some degree of motivation to improve. In addition, I expected that the motivation would be in a form consistent with the source of the model’s success. Specifically, hardworking role models would inspire individuals to work harder, and talented role models would inspire individuals to seek out and develop their own innate talents. In effect, I predicted congruence between the source of the target’s success and the kind of motivation he or she would provide. Past research indicates that such “fit” may be important, because role models representing different outcomes can motivate different kinds of behaviour. For example, models of outstanding success can encourage others to add behaviours aimed at achieving similarly positive outcomes; in contrast, models of failure can
encourage others to subtract potentially damaging behaviours in an attempt to avoid similarly negative outcomes (Lockwood, Sadler, Fyman, & Tuck, 2004). In the same way, both talent and effort models might be motivating, but they may activate different kinds of behaviours. Specifically, models who exemplify success through talent may motivate others to capitalize on their innate strengths. Models who exemplify success through effort may motivate others to work hard. I examined this possibility in Studies 1-3.

Up to this point, I have discussed how the characteristics of a role model, and specifically the source of the model’s success, might influence the degree and nature of motivation activated by that role model. In two additional studies, I also considered whether the source of a role model’s success might interact with individuals’ own implicit theories of success in determining role model effectiveness. Specifically, I examined whether the degree to which individuals believe that personality traits are either fixed or malleable would influence the way in which they would be motivated by talented or hardworking role models.

2 Implicit Theories

Implicit theories refer to individuals’ assumptions about the workings of the social world. These theories fall into two categories: Entity theories and incremental theories (Dweck, Chiu, & Hong, 1995; Levy, Stroessner, & Dweck, 1998; Molden & Dweck, 2006). Specifically, entity theorists believe that people’s essential attributes are fundamentally stable and incapable of change, whereas incremental theorists believe that people’s attributes are dynamic and can be altered. Neither entity nor incremental theories are treated as correct reflections of social reality, but as alternative perspectives on wide-reaching traits and abilities (Molden & Dweck, 2006). These theories are conceived of as both chronic
structures on which individuals might rely (Dweck & Leggett, 1988), and also as susceptible to situational activation as has been demonstrated in experimental manipulations (Levy, Stroessner, & Dweck, 1998). Both theories may have some intuitive appeal to most people, though one or the other may be more chronically accessible (Levy et al., 2001).

The implicit theories literature is often applied to achievement-focused situations, such as those in which an individual has received some information about his or her own success or failure. Failure can be either devastating and debilitating or challenging and invigorating. If attributes are seen as fixed, then failure signifies that abilities are somehow lacking. If abilities are seen as malleable, then failure signifies the extent to which an ability has developed. Therefore, to entity theorists, failures typically indicate that their fundamental abilities are insufficient in some way, whereas to incremental theorists, failure provides diagnostic information as to the state of one’s skills (Molden & Dweck, 2006). In one series of studies on the effects of failure, incremental theorists were found to respond to failure with attempts to improve their standing in the relevant domain. Entity theorists, for whom failure indicates a fundamental inability, responded to failure with attempts to minimize the importance of the domain in question, thereby minimizing the affective impact of the failure (Dweck, 1999). I expected that these findings will carry over to individuals’ reactions to role models. Upward comparisons to high achieving others are somewhat similar to failure feedback, in that individuals are confronted with the fact that their performance has fallen short of a criterion, because they have not achieved the same level of success as the target. Thus one might expect that incremental theorists will respond more positively to upward comparisons than will entity theorists (Lockwood & Kunda, 1997). I
predicted, however, that with certain attributions for the role model’s success, even entity theorists may be motivated.

2.1 Implicit Theories and Motivation

Implicit theories are related to motivation in that they are known to influence the types of goals people select for themselves. In one series of experiments, participants’ implicit theories orientation was assessed, and then they were given the opportunity to select a task (Dweck & Leggett, 1988). Some of the tasks involved performance goals, in that the participants had the opportunity to gain praise for their ability and avoid negative judgments. Performance goals refer to tasks whose primary objective is the display of knowledge, rather than the acquisition of new skills. These performance tasks, therefore, did not offer the chance to learn anything new. Other tasks involved learning goals, in that they allowed participants to increase their ability at the risk of making errors. Learning goals refer to tasks whose primary objective is improvement on some task, rather than perfect performance. Entity theorists preferred the performance goal tasks, whereas incremental theorists preferred the learning goal tasks. In effect, incremental theorists sought the chance to improve (even at the risk of occasional failure), whereas entity theorists sought a “sure thing.”

I predicted that incremental theorists would be motivated by hardworking role models because of their focus on the relationship between effort and achievement. The incremental theorist believes not only that change is possible, but that it can be purposefully brought about with sufficient effort (Dweck, 2008). A hardworking role model presents an example of just that kind of process—effort directed at a particular outcome. I predicted that hardworking role models would motivate incremental theorists because they illustrate the desirable outcome and confirm the belief that it can be achieved through persistent exertion.
Entity theorists, by contrast, do not believe that change can be brought about in this way (Dweck, 2008). In effect, they expect that they are tied to their current abilities, and to have to try hard at a task only signals that an individual is not skilled in that area. Indeed, past research on teacher perceptions of students’ talent and effort shows evidence that a student who works hard may be perceived as less talented (Jussim, 1989). The example set by a hardworking role model will therefore not be motivating to the entity theorist because it offers little promise of success. In order to motivate an entity theorist, the role model would have to appeal to their belief that one can only hope to succeed at activities for which one has particular skill. This belief, combined with the motivating power of upward comparisons, could lead entity theorists to shift their focus to areas in which they are talented. I therefore hypothesized that entity theorists would be motivated by talented role models who had achieved success by capitalizing on their existing skills, rather than trying to develop new ones.

Although the present studies are the first to examine whether implicit theories determine inspiration by hardworking and talented role models, past research has found that an individual’s implicit theory orientation may influence the kinds of social comparisons he or she prefers. Individuals whose self-esteem was threatened by a personal failure were given the opportunity to compare their work with that of another student who performed either better or worse than them. Students induced to adopt an entity perspective preferred to make downward comparisons, whereas students who did the incremental manipulation preferred to examine the work of others who had out-performed them (Nussbaum & Dweck, 2008). In this study entity theorists preferred to avoid comparisons to superior others. I expect, however, that under the right circumstances, upward comparisons may have positive
consequences even for entity theorists. Specifically, exposure to talented role models who reinforce their expectation that success is a result of doing what you’re good at, will motivate entity theorists to pursue activities at which they are already skilled.

I hypothesized that implicit theories may influence how individuals respond to role models who achieve success through talent or effort. For an incremental theorist, a role model who has worked hard to improve and become successful may be highly inspiring, providing evidence consistent with the theory that one can improve one’s own circumstances and become more successful. Indeed, some existing research suggests that this is the case. Incremental theorists who were exposed to outstanding role models rated themselves more highly on a list of desirable traits than did the participants who did not read about a role model (Lockwood & Kunda, 1997). Although this model was not explicitly described as hardworking, student participants may have inferred that the outstanding student they read about must have put significant effort into his or her studies in order to achieve success. In contrast, entity theorists did not experience this enhancement effect after reading about the role model. In fact, additional studies found that when participants’ most positive self-views were made salient, this undermined motivation and decreased self-evaluations (Lockwood & Kunda, 1999). It may be that drawing attention to an individual’s “best self” functions as a sort of entity theory induction, in that it constrains the positivity of possible future selves thereby diminishing the perceived malleability necessary for incremental theorists. In effect, one might conceptualize the entity theory as imposing a cap on an individual’s projected achievement in any one area; thinking about one’s best self imposes the same conditions. Although evidence suggests that implicit theories may be important in determining social comparison outcomes, research has not to date investigated how implicit theories may
interact with the source of a role model’s success in determining the motivating impact of that role model. In the present research, I examined this directly. I argue that talented and hardworking role models may both be motivating; however, they may motivate different kinds of behaviours.

In sum, I predicted that implicit theories will moderate the impact of role models on motivation. Role models who have worked hard at achieving success may be especially appealing to incremental theorists, who resonate to the idea that one can achieve success by making an effort to improve. A role model who is simply endowed with a specific talent may be less motivating for incremental theorists; it is presumably easier for them to imagine improving themselves through increased effort than through focusing on their existing abilities. Entity theorists, in contrast, may be unaffected or even discouraged by a hardworking model because they believe that they are not endowed with the capacity to achieve success through personal change. Rather, entity theorists may respond most positively to a model who suggests that one can achieve success by capitalizing on one’s existing talents and stable attributes rather than trying to change these attributes or develop new skills. For entity theorists, this capitalization on existing skills does not necessarily represent a change in attributes or traits, but rather a focus on those stable attributes most likely to yield successful outcomes. Thus, incremental theorists may be especially inspired by the hardworking Maria, who has achieved wealth through effort; entity theorists may be more inspired by the talented Tony, who has achieved wealth through exploiting his “god-given” money-making talents.
3 Research Overview

In the present research, I examined how the source of a role model’s success, be it talent or effort, would determine motivation activated by the role models. In three initial studies, I examined whether hardworking and talented role models might both be motivating, but in different ways. I expected that hardworking models would motivate individuals’ interest in putting effort into improving, and talented models would motivate individuals to capitalize on their existing skills. In Study 1, I examined individuals’ real life role models, assessing whether a model’s talent would be associated with more motivation to capitalize on innate abilities, whereas a model’s effort would be associated with more motivation to work hard. In Study 2, I examined whether a series of role models who clearly exemplified success through either talent or effort would be more likely to motivate individuals to enhance their own talents or to work hard. In Study 3, I assessed behavioural intentions to work hard to capitalize on talents in response to more detailed role model profiles.

In two additional studies, I examined whether implicit theories would moderate the impact of talented and hardworking role models on motivation. In Study 4, I manipulated individuals’ implicit theories (Chiu, Hong, & Dweck, 1997) and then exposed them to talent or effort models in the academic domain. In Study 5, I examined the impact of implicit theories as an individual difference variable: I exposed individuals who were chronically either entity or incremental theorists to talented and hardworking role models in the academic and financial domains. In both Studies 4 and 5, I predicted that participants who hold an entity theory of success would report high levels of motivation in response to talented role models, whereas incremental theorists would report higher levels of motivation to achieve in response to hardworking role models. Further, consistent with the expected results of Studies
1-3, I predicted that motivation would correspond to the type of success achieved by the role model; that is, talented role models would inspire a drive to capitalize on innate abilities among entity theorists, and hardworking role models would inspire increased effort among incremental theorists.

The financial and academic domains were chosen for several reasons. The social comparison literature is occasionally criticized on the grounds that comparison dimensions used in research may be meaningless to participants, and the comparison is made only once (Wood, 1996). This criticism reflects the fact that social comparisons in research are often based on small, meaningless tasks cooked up in the lab (Brickman & Bulman, 1977; Stapel & Koomen, 2001). Some theorists argue that social comparisons are only really meaningful when they occur in the “total environment” relevant to the comparer (Marsh, Kong, & Hau, 2000). Others assert that the motivational power of social comparisons can only be properly assessed in domains that are important and central to the self-concept (Taylor & Lobel, 1989). Comparisons in issues such as academics and finance fulfill these requirements because they represent domains in which participants would have continuing involvement after the study. Several researchers note that this is an important criterion for motivation and social comparison research (Aspinwall & Taylor, 1993). Indeed, social comparisons have been shown to occur more quickly and be made with more confidence when the comparer is familiar with the subject matter (Corcoran & Mussweiler, 2009); it is reasonable to expect, then, that social comparisons in the financial and academic domains would be more accessible because I can expect the participants to have made these kinds of comparisons on a regular basis. Because the participants in all five studies were students, they are likely to make social comparisons in the academic domain on an ongoing basis. The financial domain
is known to be an important one for people across life stages and social categories; plenty of research demonstrates that money is such a powerful construct as to influence even basic processes in perception (Anderson & Nevitte, 2006; Bruner & Goodman, 1947; Karlsson, Dellgran, Klingander, & Gärling, 2004; Kay & Jost, 2003; Prelec & Loewenstein, 1998; Rick, Cryder, & Loewenstein, 2008). Considering that the academic domain is salient to student participants, and the financial domain is known to be salient to nearly everyone, I believe they can both reasonably be considered familiar topics for social comparison. The financial domain is novel to the social comparison literature, and adds a timely comment on the mechanisms by which fiduciary motivation or behaviours might be acquired.

4 Study 1

In Study 1, participants were asked to report on a financial role model they had used in their daily life. Participants’ open-ended accounts were examined for evidence that these spontaneously-generated role models were successful through either talent or effort. I also asked participants to rate the models on traits relevant to talent and effort. Finally, I examined whether these talent and effort trait ratings would be associated with the kinds of motivation activated by the role models.

I predicted that open-ended descriptions would include some talented and some hardworking role models; that is, I would find evidence for both forms of role models drawn from participants’ own experiences. I had no specific prediction as to which type of role model might be more prevalent. Second, I predicted that close ended responses would indicate that participants’ own motivation would be associated with the source of their role model’s success. That is, I expected that the extent to which participants perceived their role
model to be talented would be associated with the degree to which they would feel motivated to engage their own talents. Similarly, I expected the extent to which participants perceived their role model to be hardworking would be associated with the degree to which they would feel motivated to work hard.

4.1 Method

4.1.1 Participants

Participants were 42 female and 15 male\(^1\) introductory psychology students (\(M_{age} = 20.26, SD = 3.14\)) who took part in the study for course credit or for ten dollars.

4.1.2 Procedure

Participants were invited to take part in a study titled “Role Models in Real Life.” When they arrived at the lab, participants were asked to describe an individual who served as a financial role model for their own life: “Take a moment to think about a person who is or has been a positive financial role model for you; that is, someone who has motivated you with respect to your own personal finances. In the space below, please describe this person. In what ways is this person a role model for you?”

Next, participants were asked to rate the role model they had described on two traits relevant to effort (i.e., *hardworking* and *industrious*; \(r = .37, p < .01\)) and two traits relevant to talent (i.e. *talented* and *skilled*; \(r = .51, p < .001\)). Ratings of the role model’s traits were made on a 9-point scale, with endpoints labeled 1 (*strongly disagree*) and 9 (*strongly agree*).  

\(^1\) Gender differences were not observed for Study 1 or any subsequent study.
After rating the role model on these traits, participants next rated themselves on four items indicating the extent to which the role model motivated them to earn money through effortful means (i.e., “This role model motivated me to work hard to earn money” and “This role model motivated me to put a lot of effort into earning money,” $r = .73, p < .001$) and by engaging their own talents (i.e., “This role model motivated me to use my natural talents to make money” and “This role model motivated me to capitalize on my natural gifts to make money,” $r = .70, p < .001$). Ratings of motivation were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).

### 4.2 Results and Discussion

I first examined participants’ open-ended responses for evidence that the model had achieved success through either hard work or talent. Participants generated rich and detailed accounts of specific individuals who served as role models. Some descriptions highlighted the role of hard work in success:

My friend from church has been a positive financial role model for me. [She] has different part time jobs, such as babysitting and working at a clothing store in the mall. She always seems to be working hard and saving up her own money to buy things she wants/needs.

[My mom] has worked very hard to provide for our family and had 2 jobs in order for us to have what we have today... For over 20 years she has worked two jobs, one full time and one part time to ensure me and my sister could have a positive future.

Other role model descriptions highlighted natural, inborn skills:

[Bill Gates] is an extremely intelligent person, and through his work he has completely changed how the world works with the introduction of software. Natural genius!
[My mother] has always been good with money. I remember counting the profits at the end of the day with her and seeing how she planned based on the amount...She has a [k]nack for it.

Two independent coders read the open-ended accounts and sorted them based on the source to which the role model’s success was attributed: Talent, effort or both. The two coders were in agreement for 86% descriptions. The remaining discrepancies were resolved through discussion.

Altogether, 36 (63.16%) of the descriptions fell clearly into the talent or effort categories. Although some participants did describe their role model’s innate financial talents, the majority described their model as achieving success through hard work. Specifically, the coders determined that 29 (50.88%) participants described a role model whose success was primarily a result of effort, whereas only seven participants (12.29%) described a role model whose success was a result of talent. Therefore, of the 36 people who cited either talent or effort as being the cause of their role model’s success, substantially more of them attributed that success to effort than to talent; this difference was significant $\chi^2(1) = 13.44, p < .001$. Five participants (8.77%) attributed the model’s success to both talent and effort (e.g., “She has always worked hard and continues to work hard. She is constantly educating herself and trying new things, which has allowed her to be successful. My mother has always known how to administrate money...I think she was born like that”). The remaining 16 participants (28.07%) did not give a clear source for their role model’s success. Overall, it appears that when considering financial role models, individuals may be most likely to spontaneously focus on effort as the source of the model’s success.
Although participants were less likely to mention talent in their accounts of the role model’s success, it is possible that they perceived the model to be talented, and were indeed motivated by the model’s exceptional talents. They may have focused on effort in their accounts simply due to their perceptions of what a role model “ought” to be. Accordingly, I also examined participants’ trait ratings of the models that they had described. In general, the role models were perceived to be both hardworking ($M = 7.53, SD = 1.17$) and talented ($M = 7.13, SD = 1.30$), though ratings of hard work were higher than ratings of talent $t(54) = 3.12, p = .01$.

I next assessed whether these trait ratings would be associated with specific forms of motivation; that is, I examined whether the role model’s talent would be associated with participants’ motivation to engage their talents, and whether the role model’s hard work would be associated with motivation to work hard. The extent to which role models were described as hardworking was associated with motivation to work hard $\beta = .48, t (54) = 4.01, p < .001$, but not with motivation to exploit talents $\beta = .15, t (54) = 1.31, p = .30$. I then examined the relationship between perceptions of the role model’s talent and motivation to work hard and to access talent. The extent to which role models were described as talented was associated with motivation to capitalize on talents $\beta = .28, t(54) = 2.20, p = .03$ but not motivation to work hard $\beta = .19, t(54) = 1.54, p = .65$. Thus, participants’ perceptions that their role model was hardworking were associated with their own intentions to work hard, whereas their perception that their role model was talented was associated with their own intentions to engage their talents.

In sum, Study 1 indicates that individuals may be most likely to focus on hard work as an explanation for a role model’s success. This may reflect a general expectation that
when choosing a role model, one ought to select someone who has worked hard. Nevertheless, individuals may also be motivated to the extent that they perceive the model to be talented. Overall, talented and hardworking role models may motivate corresponding behaviours—behaviours that mimic the model’s path to success—more than non-corresponding behaviours.

5 Study 2

In Study 1, participants provided examples of a single role model who inspired them. In some of these accounts, however, the relative contributions of talent and effort to the success of these models were not clear. Moreover, although the majority of participants seemed to focus on hardworking role models, it may be that they were influenced by what they thought a role model “ought” to be, rather than by who would actually inspire them to achieve greater financial success. In Study 2, I therefore provided specific examples of models that clearly represented financial success through either talent or effort, to assess the motivation activated by these models.

Participants read eight short profiles of peers who had earned money as a result of either hard work or innate talents. After reading each profile, they rated the extent to which the role model would motivate them to exert effort and take advantage of their talents. I predicted that when participants read about talented role models they would be more motivated to capitalize on their talents than to work hard. In contrast, when they read about hardworking role models, I predicted that participants would be more motivated to work hard than to capitalize on their talents. In other words, I expected that participants would report
being motivated to engage in behaviours that corresponded to the source of the role model’s success.

5.1 Method

5.1.1 Participants

Participants were 76 female and 34 male introductory psychology students (\(M_{age} = 19.74, SD = 2.35\)) who took part in exchange for credit towards their course, or for $10.

5.1.2 Procedure

Participants were recruited for a study on “Social Perceptions and Impression Formation.” Upon arriving in the lab, they were asked to read eight short descriptions of financially successful students (see Appendix A). For four of these descriptions, participants were asked to think about an individual who had achieved wealth through a special talent for making money (e.g., “Imagine a student who is a very talented investor. He has a gift for following the financial markets and has made some very profitable investments. He has become wealthy by playing the stock market”). For the remaining four descriptions, participants were asked to consider the example of individuals who had achieved success through effort (e.g., “Imagine a student who works very hard in a part-time job. This student works more hours than any of the other staff and takes on overtime whenever she can. She works very hard and still goes to school full-time. Because this student works so many hours, she has a lot more money than most other students”). Using several role models permitted me to consider an aggregate of hard work and talent, so as to minimize the unique impact of any one model.
For each role model description, the pronouns were tailored so that participants imagined a role model of the same gender as themselves. In other words, female participants read about a woman, and male participants read about a man. Gender matching was used in this study and in all subsequent experiments because comparers are known to more readily identify with same-sex role models (Ensher & Murphy, 1997).

After imagining each of the eight role models, participants rated their own motivation on two items. They therefore indicated their motivation to work hard (i.e., “this student motivates me to work harder”; $\alpha = .81$) and to make the most of their existing talents (i.e., “this student motivates me to capitalize on my talents”; $\alpha = .83$) a total of eight times each. Ratings of the role model’s traits were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).

5.2 Results and Discussion

I created indices across the eight profiles for participants’ motivation to engage their talents and to work hard. A 2 (role model type: talented versus hardworking) x 2 (motivation: hard work versus effort) repeated measures ANOVA revealed a significant interaction $F(1, 109) = 48.71, p < .001$.

After being exposed to the hardworking role models, participants reported marginally higher motivation to work hard than to engage their talents $F(1, 109) = 2.03, p = .09$; after being exposed to the talented role models, they reported higher motivation to engage their talents than to work hard $F(1, 109) = 3.34, p = .03$.

Figure 1: Motivation Type Corresponds to Role Model Type
Study 2 thus provides further evidence that role models who have achieved financial success as a result of either talent or hard work can motivate others to accrue wealth. As in Study 1, however, participants were motivated to accrue wealth in a manner congruent with that used by the role model. Specifically, participants reported that hardworking role models motivated them to work hard, whereas talented role models motivated them to engage their talents in order to make money.

I note, however, that participants may have been guided in part by their theories about how they should be affected by such models. That is, they may have felt that they ought to be motivated to work hard when they encounter a very industrious person, but their theory may not map onto their actual response to such a model. Alternatively, people might hold some bias towards hard work as the more appropriate path to success, despite being motivated by the example set by talented role models. For instance, they may believe that hard work is more virtuous and therefore report that they are motivated by the hard workers
as a result of social desirability concerns. Accordingly, in Study 3, I used an experimental methodology to assess motivation following exposure to role models, without relying on participants’ self-reported beliefs about how these models would affect them.

6 Study 3

I also used Study 3 to examine reactions to more fully-developed financial exemplars. Whereas participants in Study 2 reported their reactions to a set of very brief role model descriptions, participants in Study 3 read one richer, more detailed account of an individual who had achieved financial success. Additionally, whereas participants in Study 2 completed a dependent measure assessing very general motivation to work hard or capitalize on talents, participants in Study 3 rated themselves on items tapping more specific behavioural intentions relevant to talent and effort. Finally, by using an experimental methodology, I was able to assess participants’ actual intentions following exposure to financial role models, and not simply their beliefs about how such role models would affect their motivation.

Participants read a profile of a peer who had amassed a substantial amount of money as a result of either talent or effort. In the talent condition, the role model had earned his or her money by exploiting a talent for picking stocks. In the effort condition the role model had earned his or her money by working long hours at a part time job. After reading one of the profiles, participants rated their intentions to work hard and engage their talents. I predicted that participants who read about a talented role model would be more motivated to capitalize on their talents than to work hard. I predicted that participants who read about a hardworking role model would be more motivated to increase their efforts than to capitalize on their talents.
6.1 Method

6.1.1 Participants

Participants were 16 male and 29 female introductory psychology students (\(M_{age} = 18.58, SD = 1.34\)) who took part in the study in exchange for credit towards their course, or for $10.

6.1.2 Procedure

Participants were recruited for a study titled “Social Perceptions and Impression Formation.” They were told that they would be asked to assess an individual’s personality based on a short self-description. Participants read an account, ostensibly written by another student who described his or her financial success (see Appendix B). The student was presented as being an upper-year peer, because previous research has demonstrated that students view slightly older targets’ achievements as being more attainable than those of same-age peers, and therefore more motivating (Lockwood & Kunda, 1997). With longer profiles, I was able to include more information about the role model’s life, such as friendships and leisure activities. Details such as these were included to ensure that the role model was viewed as a likeable person whom the participants might want to emulate.

In the talent condition, the role model described how he/she had earned a lot of money as a result of a particular talent for picking stocks:

A few years ago I started investing money once in a while, just for fun. Stocks go up and down, but for the most part I’ve been really successful. I just have a knack for picking stocks, I guess. I’ve earned quite a lot of money over the years, and most of the time I re-invest it so it will grow. It’s great that I can earn so much money doing something that comes so easily to me. I definitely have more money than my friends. I am still in school, but with this money I have been able to travel and live a more expensive lifestyle than most
other students. I have $20,000 in my bank account, and I plan to go on some more vacations…

In this scenario the target describes effortless success, and attributes this success to a special gift, rather than to any exertion or effort. In the effort condition, by contrast, the role model described how he/she had earned a lot of money by working long hours at a part-time job:

I have a part-time job, and I take as many hours there as I can get. I take overtime whenever I get the chance, and often I stay late if there’s more work to be done. I work right through the Christmas holidays, and most evenings and weekends. It’s tiring but it’s nice to earn that much money. I definitely have more money than my friends. I am still in school, but with this money I have been able to travel and live a more expensive lifestyle than most other students. I have $20,000 in my bank account, and I plan to go on some more vacations…

In the effort condition scenario the target emphasizes the hard work he or she exerted, and insists that it was this hard work that resulted in success. In the final sentences of each profile, the role model notes that he or she is wealthier than most other students, and has amassed a substantial nest egg. Thus, both role models are equally wealthy, but have achieved their wealth in very different ways.

In keeping with the cover story that the experiment was focused on social perception processes, participants were then asked to write a short description of the target they read about. Control condition participants were not exposed to a role model profile.

Participants were next asked to indicate their motivation to engage in a variety of financial behaviours. They were told that this information was being collected “for purposes of experimental control, as your own plans for the future might influence how you respond to other people.” Participants rated their intentions to accrue wealth on 14 items related to hard work (e.g., “I plan to work hard in order to earn money,” $\alpha = .89$) and 14 items related to
talent (e.g., “I plan to earn money by doing things I am good at,” $\alpha = .79$). Ratings were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).

Participants who read about a role model also responded to four general manipulation check items assessing the extent to which the target individual was perceived to be a high-achieving role model (i.e. “I would want to be like this person,” “I consider this person a role model for me,” “This person is very successful” and “I could achieve the same level of success as this person”; $\alpha = .68$). Ratings were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree). Finally, participants were asked to describe the source of the role model’s wealth with one open-ended item (i.e., “How did this person earn his or her money?”)

### 6.2 Results and Discussion

An analysis of the general manipulation check items revealed that the talented ($M = 7.06, SD = 2.11$) and hardworking targets ($M = 6.70, SD = 1.79$) were both perceived to be high achieving role models; ratings of the two targets did not differ significantly, $t(32) = .55, p = .59$. An examination of participants’ descriptions of how the role model earned his or her money revealed that all participants correctly identified the source of the role model’s wealth. Participants who had read about a hardworking role model correctly attributed his or her wealth to working hard at a job. Participants who had read about a talented role model correctly attributed his or her wealth to a talent for picking stocks.

I next examined the impact of the talent and effort role models on participants’ motivation to work hard and engage talents. A 3 (role model type: talented, hardworking or control) X 2 (motivation: talent or hard work) ANOVA, with role model type as a between
participants variable and motivation type as a within participants variable, revealed a significant interaction between role model condition and motivation type, $F(2, 42) = 6.23, p = .01$.

Participants in the hardworking role model condition were more motivated to work hard than they were to engage their talents $F(1, 20) = 4.55, p = .01$; in contrast, those who read about a talented role model were marginally more motivated to engage their talents than to work hard, $F(1, 20) = 2.98, p = .07$. Motivation to engage in non-corresponding behaviours— talent condition participants’ motivation to work hard and hard work condition participants’ motivation to engage their talents— did not differ significantly from the corresponding motivation in the control condition ($ps > .35$; see Figure 2). There were no main effects of role model type or motivation type, both $ps > .60$.

**Figure 2: Non-Corresponding Motivation is No Different from the Control Condition**

![Graph showing motivation levels](image-url)
As in Studies 1 and 2, hardworking role models motivated participants to work hard, whereas talented role models motivated participants to engage their talents. These results indicate that although both types of role models can be motivating, they inspire different things: Each one inspires only those behaviours which correspond to the source of the role model’s success. Participants who read about a hardworking role model were motivated to work hard to earn money, but not to capitalize on their talents, whereas participants who were exposed to a talented role model were motivated to focus on their talents, but not to work harder.

7 Study 4

Studies 1-3 indicate that although both talented and hardworking role models are motivating, they motivate different kinds of behaviour. It is not clear, however, whether these role models will be equally motivating for all people. That is, some people might be more motivated by hard-working models and others by talented models. In Study 4, I examined implicit theories (Molden & Dweck, 2006) as a possible moderator of role model effects.

In their implicit theories framework, Dweck and her colleagues argue that individuals can hold either entity or incremental theories about themselves and the world (Beer, 2002; Dweck, 2008; Dweck, Chiu, & Hong, 1995; Molden & Dweck, 2006; Plaks, Levy, & Dweck, 2009). Incremental theorists are individuals who believe that traits are malleable and changeable: For example, an incremental theorist might believe that individuals can improve their IQ scores if they try hard enough. For such individuals, hardworking role models may be especially motivating. Hardworking role models work their way to the top of their domain of success by progressively increasing their achievements through their own efforts,
and as such, should be especially appealing for incremental theorists. In contrast, talented models are individuals who have achieved success through some innate ability; although incremental theorists may believe that they can hone the abilities they were born with, I would expect that such models of success will be less motivating than the hardworking models.

Entity theorists, on the other hand, believe that an individual’s traits and abilities are largely fixed and not subject to change, even with effort. They are unlikely to believe that they can achieve the success accomplished by a hardworking role model, because that individual’s gradual improvement is contrary to their expectations for success. A model who has achieved success by engaging the talents he or she was born with may be more appealing for entity theorists. Entity theorists may not believe they can develop new talents, but a role model who has achieved success by making the most of present aptitudes may serve as an inspiring reminder to entity theorists that they themselves can achieve success by focusing on their existing abilities. For example, an entity theorist might be encouraged to hear of a person who discovered that he or she has talent for a particular academic subject; this might motivate the entity theorist to seek out and focus on a subject in which he or she is especially proficient. I predicted that talented role models would motivate entity theorists not to emulate the model precisely, but to seek out and take advantage of their own unique skills.

In sum, I expected that both hardworking and talented role models might be inspirational, but that the degree of inspiration evoked would be determined by the implicit theory orientation most salient to participants at the time of exposure. I predicted that individuals would be most motivated by a role model who has achieved success in a manner congruent with individuals’ theories about the world. That is, people induced to adopt an
incremental theory—those who believe that individuals can change their skills and abilities—will be most motivated by a hardworking role model who has brought about change for him or herself; moreover, consistent with the findings of Studies 1-3, this motivation should take the form of an increased interest in working hard. In contrast, I expected that people induced to adopt an entity theory—those who think change is unlikely—will be most motivated by a talented role model who has discovered his or her talents and has made good use of them; consistent with the findings of Studies 1-3, their motivation should take the form of an increased interest in capitalizing on their own talents.

7.1 Method

7.1.1 Participants

Participants were 23 male and 70 female University of Toronto students enrolled in Introductory Psychology (\(M_{age} = 19.61, SD = 3.16\)). Participants received course credit for taking part in the study.

7.1.2 Procedure

Participants were recruited for a study titled “The Effects of Cognitive Skills on Social Perception Processes.” They were told that they would do a reading comprehension task followed by a social perception task. Participants were randomly assigned to read an article developed by Dweck and her colleagues (e.g., Chiu, Hong, & Dweck, 1997) aimed at inducing either incremental or entity beliefs in participants. The materials were written to resemble articles from the popular media reporting on scientific findings, and they represent the most common implicit theories manipulation in the literature (Haslam & Ernst, 2002; Haslam, Bastian, Bain, & Kashima, 2006; Levy, Stroessner, & Dweck, 1998; Molden & Dweck, 2006; Molden, Plaks, & Dweck, 2006; Yeager, Trzesniewski, Tirri, Nokelainen,
Dweck, 2011). The entity induction article is titled, “Can you really become a new person? New research suggests that personality remains largely the same- even over decades.” The incremental induction article is titled, “Can you become a new person? New research suggests that with time and effort, people can develop new skills and traits.” For this experiment both articles were formatted to look as though they had been printed from the Science section of the New York Times’ website. Both articles discussed bogus scientific findings and personal anecdotes demonstrating that an individual’s traits and abilities are either fixed (entity condition) or malleable (incremental condition).

After reading one of the articles, participants were given a “reading comprehension quiz”— actually the manipulation check. The manipulation check included the standard implicit theories scale (Levy, Stroessner, & Dweck, 1998). Participants indicated the extent to which they agreed with eight items tapping incremental (e.g., “Everyone, no matter who they are, can significantly change their basic characteristics.”) and entity (e.g., “The kind of person someone is, is something very basic about them and it can’t be changed very much.”) beliefs. Ratings were made on a 9-point scale with end-points ranging from 1 (agree) to 9 (disagree). Following the procedure described by the scale’s developers (Dweck, Chiu, & Hong, 1995; Levy, Stroessner, & Dweck, 1998), I reverse-scored entity items, and averaged all items to form an overall implicit theory score, with a higher score indicating a stronger incremental theory ($\alpha = .87$).

Following the implicit theories manipulation, participants were randomly assigned to one of three role model conditions, similar to those used in Study 3: The hardworking role model, the talented role model, or the no-model control condition. The role model information was modeled after Study 3, in that it was written in the first person (see
However, the role model profiled for this experiment differed slightly from Study 3, in that both role models described how they had earned a lot of money by investing in the stock market. This change was made in order to ensure that the talent and effort condition profiles were as similar as possible.

In the effort condition profile, the model notes that his/her success was a result of hard work:

In my spare time I like to follow the stock market- it’s sort of my hobby. It’s a lot of hard work, but also fun to do and I’ve made a lot of money at it… Stocks go up and down, but for the most part I’ve been really successful, probably because I’ve spent so much time learning about the markets. I’ve earned quite a lot of money over the years, and most of the time I re-invest it so it will grow. It’s great that I can earn so much money at it, even if it does take a lot of effort…

In the talent condition, by contrast, profiles noted that his/her success seemed effortless, and was obviously a result of talent:

In my spare time I like to follow the stock market- it’s sort of my hobby. It’s fun to do and I’ve made a lot of money at it… Stocks go up and down, but for the most part I’ve been really successful. I just have a knack for picking stocks, I guess. I’ve earned quite a lot of money over the years, and most of the time I re-invest it so it will grow. It’s great that I can earn so much money doing something that comes so easily to me…

Control condition participants did not read a role model profile.

### 7.1.2.1 Trait Rating

In line with the cover story that the experiment was focused on social perception, participants rated the role models on five general traits (i.e., *successful, friendly, fun, likeable, and happy; α = .81*) immediately after reading the profiles. As a manipulation check, I also included four traits assessing the degree to which the role model was perceived to be hardworking (i.e., *hardworking, industrious; r = .34, p = .01*) and talented (i.e., *talented and*
Skilled; $r = .60, p < .001$). Ratings of the role model’s traits were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).

7.1.2.2 Motivation

Participants were next told that, because their own plans for the future might influence their judgments of the target individual, I wanted them to answer a few questions regarding their intentions for financial behaviour. All participants completed a motivation measure which assessed their intentions to perform a variety of behaviours, including 12 items assessing motivation to engage talents (e.g., “I plan to try to use the abilities that I already have in order to earn money”; $\alpha = .93$), and 12 items assessing motivation to work hard (e.g., “I plan to put more effort into making money”; $\alpha = .81$). Participants responded to these items on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).

7.2 Results and Discussion

7.2.1 Lay Theories Manipulation Check

The lay theories manipulation was successful in that participants who were exposed to the incremental theory induction article reported more incremental beliefs ($M = 8.09, SD = 1.88$) than did participants assigned to the entity condition ($M = 5.68, SD = 2.35$), $t(94) = 5.49, p < .001$.

7.2.2 Trait Ratings

I examined participants’ trait ratings of the role model, provided immediately after they had read the role model profile. First I conducted a 2 (implicit theory: entity versus incremental) x 2 (role model type: talent versus hard work) ANOVA on the general positivity
of ratings of the role model. Both the talented ($M = 5.93, SD = 1.02$), and hardworking models ($M = 5.87, SD = 1.12$) were viewed positively, and there was no difference between them, $p > .80$. There were no main effects or interactions, all $F$s < 2.33, all $p$s > .18.

I then examined the index of trait ratings of talent. There was a marginal main effect of role model condition, such that participants who read about a talented role model rated that individual as being marginally more talented ($M = 6.75, SD = 1.05$) than did participants in the hardworking condition ($M = 6.00, SD = 1.31$) $F(1, 59) = 2.67, p = .07$. There were no other main effects or interactions, $F$s < .90, $p$s > .13.

I next examined the index of hardworking terms. I observed the expected main effect of role model condition, such that participants who read about a hardworking role model rated that individual as being significantly more hardworking ($M = 6.59, SD = 1.10$) than the talented role model ($M = 5.81, SD = 1.21$) $F(1, 59) = 6.49, p = .01$. There were no other main effects or interactions, all $F$s < .129, $p$s > .26.

7.2.3 Motivation

7.2.3.1 Motivation to Work Hard

I next tested whether the type of role model would interact with participants’ own implicit theories in determining their motivation to work hard. Thus, I conducted a 3 (role model type: hardworking, talented, or control) by 2 (participants’ implicit theory: entity or incremental) ANOVA. The predicted interaction between implicit theories and role model type was not significant $F(2, 89) = 4.30, p = .65$. There were no other main effects or interactions, all $F$s < 2.04, $p$s > .14.
7.2.3.2 Motivation to Engage Talents

I next conducted the same analyses for motivation to engage talents. The predicted interaction between implicit theories and role model type was not significant $F(2, 89) = 2.00, p = .15$. There were no other main effects or interactions, all $F$s < 2.00, $ps > .10$.

Thus, my hypothesis regarding the interaction between implicit theories and source of the role model’s success was not supported. Furthermore, the previous results and patterns in existing literature (Lockwood & Kunda, 1997; Lockwood & Kunda, 1999) were not replicated, in that the role models provided no more motivation than was observed in the no-model control condition.

The dearth of significant effects in Study 4 might be a result of the fact that all participants received the lay theories manipulation. The lay theories manipulation itself was successful, in that participants who received the incremental manipulation perceived people’s traits and abilities as being more malleable than did participants who received the entity manipulation. However, the content of the manipulation may have been problematic. Both the entity and the incremental manipulations provide anecdotes of individuals who are high-achievers, and who might themselves function as role models. For instance, the incremental manipulation emphasizes the example of Benjamin, an academic high-achiever:

Benjamin M. exhibited very little self-discipline during his early childhood. When he was four years old, he constantly needed his parents to urge him to get dressed in the morning or to go to bed at night. However, through training from teachers and peer pressure in his highly competitive schools, he eventually learned good organizational skills, so that by the time he was in college, he was usually better prepared for examinations than the other students…

The entity article also described Benjamin’s achievements:
Benjamin M. exhibited a great deal of self-discipline during his early childhood. Even when he was four years old, he didn’t need his parents to urge him to get dressed in the morning or to go to bed at night. By the time he was in college, he was usually better prepared for examinations than the other students…

As a result, even the no-role model control-condition participants, who did not read one of the role model profiles created for these experiments, were nevertheless exposed to upward comparisons to high achievers. Thus, the lack of role model effects in this study may have been due to the lay theories manipulation. Because all participants were exposed to this manipulation, either in the entity or incremental form, all participants read about a high-achiever. As a result, they may have been highly motivated regardless of whether or not they were subsequently exposed to a hardworking or talented role model.

Another possible reason for the non-significant findings might lie in my methodology, in that I induced people to adopt entity and incremental theories rather than relying on their chronic orientation. The induced implicit theories may not have been sufficiently powerful for participants in this study. In Study 5, I attempted to further examine my hypotheses regarding implicit theories and role models using measured rather than manipulated implicit theories. This approach has the additional advantage of avoiding the inclusion of the inadvertent role models that appeared in the implicit theories induction articles. I expected that chronic orientation might be more influential than the temporarily activated beliefs used in Study 4, and might therefore have a greater impact on participants’ responses to talented and hardworking role models.

8 Study 5

In Study 5 I recruited entity and incremental theorists and exposed them to talented or hardworking role models. They read a profile of an individual who had become successful as
a result of innate talent or hard work. They then rated their motivation to work hard and capitalize on their talents. I predicted that entity theorists would be most motivated by talented role models, and that incremental theorists would be most motivated by hardworking role models.

I also used Study 5 to examine the impact of talented and hardworking role models beyond the domain of financial success. Studies 1-3 indicate that both talented and hardworking role models may be motivating, but because these studies focused only on financial achievements, it is not clear that models of talent and effort will be motivating in other domains. In Study 5, therefore, I examined models of success in both the financial and academic domains. I predicted that incremental theorists would be most motivated by hardworking role models, but that entity theorists would be most motivated by talented models, regardless of the domain in which the model had achieved success.

8.1 Method

8.1.1 Participants

Participants were 67 male and 106 female University of Toronto students enrolled in Introductory Psychology ($M_{age} = 19.02$, $SD = 1.12$). Participants received course credit or $10 for taking part in the study.

8.1.2 Pre-Screening

At the beginning of the term, participants completed the implicit theories scale (Levy, Stroessner, & Dweck, 1998) as part of a larger mass testing questionnaire administered by the Department of Psychology. Participants indicated the extent to which they agreed with eight items tapping incremental (e.g., “Everyone, no matter who they are, can significantly
change their basic characteristics.”) and entity (e.g., “The kind of person someone is, is something very basic about them and it can’t be changed very much.”) beliefs. Ratings were made on a 5-point scale with end-points ranging from 1 (agree) to 5 (disagree). Following the standard procedure for this scale, (Dweck, Chiu and Hong, 1995; Levy, Stroessner, & Dweck, 1998), I reverse-scored entity items, and averaged all items to form an overall implicit theory score, with a higher score indicating a stronger incremental theory ($\alpha = .83$).

Next, again following procedures set out by the scale developers (Dweck, Chiu and Hong, 1995; Levy, Stroessner, & Dweck, 1998), participants were classified as entity theorists if their overall implicit theory score was 2.5 or below and as incremental theorists if their overall implicit theory score was 3.5 or above. Participants were selected for the study only if they fell into either of these entity or incremental categories. Of 1095 individuals who completed the mass testing booklet, 538 had sufficient data—contact information and implicit theories raw scores—for inclusion in this study. Of those, 163 entity theorists and 206 incremental theorists qualified for the experiment based on the standard selection criteria. An additional 169 individuals fell in the middle of the scale and therefore did not fall clearly into the entity or incremental theory categories. Only those participants who could be categorized as incremental or entity theorists were invited to participate (Chiu, Hong, & Dweck, 1995).

8.1.3 Procedure

Participants were invited to take part in a study ostensibly examining impression formation and social perception processes. Upon arrival at the lab, they first read a bogus set of descriptions of a student who had achieved a very high level of success either through effort or talent, in either the financial or academic domain. Role model descriptions differed
slightly from those used in Studies 3 and 4, in that accounts were written in the third person, rather than the first person (see Appendices D & E). Participants read three short descriptions of the target, each one purported to have been written by a friend of the target. This third-person phrasing allowed me to give information about the target that might seem self-aggrandizing if written in the first person. The target was described as being an upper-year peer, because previous research has demonstrated that students view older targets’ achievements as being more attainable and therefore more motivating (Lockwood & Kunda, 1997). In the talent condition, the role model’s friends described how he/she had a particular talent for picking stocks:

In her spare time she plays the stock market—quite successfully, I think. I asked her once if she had studied economics or done any special training, but she said no—she doesn’t even keep up with the newspapers really. Picking stocks is just something she’s always been good at. Krista just has a natural talent for investing.

or getting high grades:

He does extremely well in school, almost without trying, I think. Rob just seems to have a natural intelligence—academic achievement comes easily to him. I’ve never heard him brag about it, but you eventually notice that he gets stellar marks on all of his assignments with minimal effort. I’ve seen it in courses we’ve taken together—he puts very little time into his term papers and lab reports, but they are always very well written.

In this scenario, the target is described as having effortless success, and attributes this success to a “knack,” or talent, rather than to any particular effort. In the effort condition, the role model’s friends describe how he/she has worked very hard to develop skills for picking stocks:
In his spare time he plays the stock market—quite successfully, I think. I asked his once if he had studied economics or done any special training, and he has—he told me he studied the markets for years before he made his first trade. I know he’s taken several personal investing workshops as well. I often see him reading the business section of the newspaper or checking up on business and investing blogs whenever he has a spare minute. Our friends sometimes ask him if all that reading is really necessary and he said he could never be a successful investor without it.

Or getting high grades:

She is a very dedicated student and she does extremely well in school. Krista puts a lot of effort into her studies. I’ve never heard her brag about it, but you eventually notice that she gets stellar marks on all of her assignments and that she’s studying all the time. I asked her once if she thinks that all that studying is really necessary and she said that she would never get such high grades without it.

The key feature of the effort condition scenario was the target’s emphasis of the hard work he or she exerted, and the insistence that it was this hard work that resulted in success.

8.1.3.1 Trait Ratings

As in Study 4 and in line with the cover story that the experiment was focused on social perception, participants rated the role models on five general traits (e.g., successful, friendly, fun, likeable, and happy; $\alpha = .79$) immediately after reading the profiles. This set also included four traits assessing the degree to which the role model was perceived to be hardworking (i.e., hardworking, industrious; $r = .77, p < .001$) and talented (i.e., talented and skilled; $r = .85, p = .04$). Ratings of the role model’s traits were made on a 9-point scale, with endpoints labeled 1 (strongly disagree) and 9 (strongly agree).
8.1.3.2 Motivation

As in Study 4, participants were next told that, because their own plans for the future might influence their judgments of the target individual, the researchers wanted them to answer a few questions about their intentions for financial or academic behaviour. Participants who read about a financially successful role model rated their intentions to accrue wealth on 10 items related to hard work (e.g., “I plan to work hard in order to earn money,” $\alpha = .81$) and 10 items related to talent (e.g., “I plan to earn money by using my talents,” $\alpha = .76$). Participants responded to these items on a 7-point scale with endpoints labeled -3 (I do not plan to do this) to 3 (I definitely plan to do this). Negative ratings were included to allow for the possibility of “de-motivation.” That is, I considered the possibility that incremental theorists exposed to a talented model, and entity theorists exposed to a hardworking model, might actually be discouraged, and consequently less motivated than they would be without exposure to any role model. Participants who read about an academically successful role model rated their intentions to earn higher grades on 10 items related to hard work (e.g., “I plan to work hard in order to earn high grades” $\alpha = .75$) and 10 items related to talent (e.g., “I plan to rely on my intelligence in order to get good grades” $\alpha = .60$). Participants responded to these items on the same -3 to 3 scale used for the financial motivation items. Control condition participants completed these items without first reading about a role model.

8.2 Results and Discussion

8.2.1 Trait Ratings

Next, I examined participants’ trait ratings of the role model, provided immediately after they had read the role model profile. First I examined an index of the general positivity
of ratings of the role model. There were main effects of both domain and role model condition. Participants assigned to the academic domain rated the role model more positively ($M = 6.97, SD = .79$) than did participants in the finance domain ($M = 6.49, SD = 1.04$) $F(1, 114) = 8.49, p = .01$. Participants who had read about a hardworking role model rated that individual more positively ($M = 6.97, SD = .81$) than did participants who had read about a talented role model ($M = 6.51, SD = 1.05$) $F(1, 114) = 6.21, p = .01$.

I then examined the index of trait ratings of talent. There was a main effect of domain, such that participants who read about an academic role model ($M = 7.49, SD = 1.14$) rated the target as being more talented than did participants who read about a financial role model ($M = 6.73, SD = 1.40$), $F(1, 114) = 10.89, p < .001$. There was a marginal effect of role model condition, such that participants who read about a talented role model rated that individual as being marginally more talented ($M = 7.31, SD = 1.42$) than did participants in the hardworking condition ($M = 6.90, SD = 1.21$) $F(1, 114) = 3.23, p = .07$.

For trait ratings of effort I observed the expected main effect of role model condition, such that participants who read about a hardworking role model rated that individual as being significantly more hardworking ($M = 7.39, SD = 1.11$) than the talented role model ($M = 5.64, SD = 1.06$) $F(1, 114) = 87.73, p < .001$. There were no other main effects or interactions, all $ps > .35$.

### 8.2.2 Motivation

I next set out to examine the predicted effects of talented and hardworking role models on motivation to work hard and motivation to engage talents. Because I did not anticipate differences in motivation across domain, I created dependent variable indices that
were collapsed over the academic and financial domains. However, because I recognized that effects might be stronger in one domain than another, I included domain (academic or financial) as an independent variable in all analyses.

### 8.2.2.1 Motivation to work hard

I first examined whether the type of role model would interact with participants’ own implicit theories in determining participants’ motivation to work hard; I also included domain of success to examine whether this interaction was similar for both the financial and academic domain. Thus, I conducted a 3 (role model type: hardworking, talented, or control) by 2 (participants’ implicit theory: entity or incremental) by 2 (domain: financial or academic) ANOVA. Results revealed the predicted implicit theories by role model type interaction, $F(2, 161) = 4.31, p = .02$. Planned comparisons revealed no difference between entity and incremental theorists in the talent and control conditions (both $p$s > .10). In the hardworking condition, in contrast, incremental theorists were more motivated to work hard ($M = 2.32, SD = 1.16$) than were entity theorists ($M = 1.66, SD = 1.28$) $F(1, 58) = 4.37, p = .04$. Thus, as predicted, hardworking role models motivated incremental but not entity theorists to work harder themselves. Talented role models did not differentially motivate entity and incremental theorists.

**Figure 3: Motivation to Work Hard**
There was also a main effect of domain, such that participants in the academic condition were more motivated to work hard \((M = 2.51, SD = 1.08)\) than were participants who read about a wealthy role model \((M = 1.29, SD = 1.30)\) \(F(1, 161) = 44.66, p < .001\). It may be that the participants in this study were especially motivated to do well in school, and less focused on accruing wealth, because they were still students and not yet earning a salary. No other main effects or interactions were significant, all \(ps > .20\).

### 8.2.2.2 Motivation to engage talents

I next conducted a 3 (role model type: hardworking, talented, or control) by 2 (participants’ implicit theory: entity or incremental) by 2 (domain: financial or academic or financial) ANOVA with motivation to engage talent as the dependent variable. The predicted implicit theory by role model type interaction did not reach significance, \(F(2, 161) = 1.67, p = .28\). There was a main effect of domain, such that participants in the academic condition were more motivated to engage talents \((M = 1.68, SD = .67)\) than were participants who read about a wealthy role model \((M = .60, SD = .71)\), \(F(1, 161) = 33.47, p < .001\).
Student participants may have been especially motivated by an example of academic rather than financial success due to their student status. There was also an interaction between domain and role model condition, $F(2, 161) = 3.83, p = .02$. Among participants who read about a talented role model, those in the academic condition were more motivated ($M = 1.75, SD = 1.17$) than were participants in the finance condition ($M = .52, SD = 1.41$), $F(1, 61) = 14.18, p < .001$. A similar pattern emerged in the control condition: participants in the academic condition were more motivated to engage their talents ($M = 1.73, SD = 1.22$) than were participants in the finance condition ($M = .13, SD = 1.49$), $F(1, 49) = 17.50, p < .001$. However, among participants who read about a hardworking role model, there was not a significant difference between those in the academic ($M = 1.51, SD = .57$) and finance conditions ($M = 1.27, SD = .89$), $p > .40$. There were no other main effects or interactions ($ps > .500$).

It is not clear why I observed an interaction between role model type and domain for the talent dependent variable. It may be that, although student participants were less motivated in the financial domain than the academic domain, their general preference for hardworking role models counteracts this effect, making the financial role model slightly more motivating when he or she is perceived to have expended a great deal of effort. In other words, it may be that the positive effect of hardworking role models helps to overcome the fact that participants derived less motivation from financial role models. This finding also has implications for Studies 1-4, in that the effects I observed may have been stronger had I used the academic domain; this is a possibility that may be explored in future research.

Taken together, these results provide partial support for my predictions about implicit theories and role model type. I found the predicted interaction between implicit theory
orientation and role model type for motivation to work hard. Specifically, incremental theorists who had read about a hardworking role model were more motivated to work hard than were entity theorists who read about this model, or individuals who did not read about any model. A hardworking role model might be most appealing to incremental theorists, who are most likely to believe that they can achieve success through effort. Entity theorists, who are less likely to expect effort to pay off, are less likely to be motivated by the hardworking model.

Although results supported my prediction that incremental theories would be most motivated by hardworking role models, I did not find complementary evidence that entity theorists would be most motivated by talented role models. I had expected that entity theorists who had been exposed to a talented target would have been motivated to capitalize on their talents: The talented role model might appeal to their belief that, because one’s traits and abilities are not likely to change, one must take advantage of those skills one possesses already. My failure to obtain the predicted effect may be due in part to participants’ implicit ideas about what a role model should be. It might be that individuals generally expect that hard work is virtuous, and an individual who did not have to expend a great deal of effort in order to achieve success is somehow less admirable and therefore elicits less motivation; these beliefs are thought to provide the foundation for just world beliefs and the Protestant work ethic (Lerner, 1977; Mirels & Garrett, 1971). Indeed, results of the trait ratings indicate that hardworking role models were viewed more positively than talented role models.
9 General Discussion

Studies 1-3 establish that both talented and hardworking role models are motivating, and that they motivate different kinds of behaviours. The results of Study 1 demonstrate that the source of a “real life” role model’s success is correlated with the kind of motivation that individual inspires. In this study, however, hardworking role models were nominated more often than talented role models, which may reflect participants’ individual theories as to which kinds of role models ought to be motivating. Study 2 demonstrated that both talented and hardworking role models can be motivating, and that people report that they would be motivated to pursue success by the same means as the role model. Specifically, when reading about a talented role model, people reported that they were more motivated to rely on their talents; when reading about a hardworking role model, they reported that they were more motivated to work hard. In Study 3 I confirmed that talented and hardworking role models are motivating, in that participants who were exposed to a role model reported higher motivation than those who did not read about a role model, and they were only motivated to engage in behaviours that matched the model’s path to success. Participants who read about a hardworking role model reported intentions to work hard, and participants who read about a talented role model reported intentions to engage their talents. Furthermore, motivation to engage in non-corresponding behaviours—behaviours that did not result in the role model’s success—did not differ from the control condition. That is, individuals who read about a talented role model were motivated to utilize their talents, but their motivation to work hard was no different from the control condition. Similarly, participants who read about a hardworking role model reported the intention to put a lot of effort into making money, but their motivation to explore and capitalize on their talents was no different from the control
condition. Thus, there is an issue of “fit” between the source of the role model’s success and the behaviours he or she inspires. Talented and hardworking role models can both be motivating, but they motivate people to pursue only those activities to which the model’s success is attributed.

Study 4 aimed to show that entity theorists would be more motivated by talented role models, and incremental theorists would be more motivated by hardworking role models. However, the hypothesized relationship between implicit theories and motivation by talented and hardworking role models was not supported. Furthermore, the results of Study 3 were not replicated, in that no condition in Study 4 showed increased motivation following exposure to a role model, regardless of the source of his/her success. As noted earlier, it may be that the lay theory manipulation itself interfered with the role model manipulation: The anecdotal “success stories” described in the lay theory articles may have functioned as inspirational role models, making it difficult to detect further inspiration resulting from the talented and hardworking role model manipulation.

Study 5 avoided the possible pitfalls of the implicit theories manipulation, in that I recruited entity and incremental theorists rather than inducing participants to adopt one perspective or the other. The hypothesized relationship between implicit theories and the source of a role model’s success was partially supported in Study 5. I had predicted that incremental theorists would report the highest levels of motivation after having read about a hardworking role model, and that they would be motivated to pursue success by the same means as the target: By working hard. I predicted that entity theorists would report the highest levels of motivation after having read about a talented role model, and they would likewise be motivated to pursue success by the same means as the target: By capitalizing on
their own talents. The results showed that incremental theorists were indeed the most motivated to work hard by hardworking role models. Similar effects were not observed for entity theorists’ motivation to exploit their talents when exposed to the talented role model.

One reason that entity theorists failed to exhibit motivation might be related to the kinds of achievement domains to which I exposed them. Previous research demonstrates that implicit theories influence the kinds of goals people select for themselves. Given the choice, incremental theorists are likely to select mastery tasks that give the individual the opportunity to learn new skills, often through a process of trial and error (Dweck & Leggett, 1988). Entity theorists, on the other hand, are more likely to select performance tasks that offer them the opportunity to demonstrate their success without risk of failure, though they do not include the opportunity to learn something new. The achievement domains in my experiments may have been too mastery-oriented for entity theorists, in that academics and finance both include the risk of failure. I could overcome this problem in future experiments by asking participants to set their own goals in a domain of their choosing. I would predict that entity theorists would establish goals that emphasize their existing strengths, and that they would be most likely to do so after reading about talented role models.

There is a second issue stemming from the academic domain, in that participants in Study 5 were more motivated to work hard after reading about an academic role model than a financial role model. This is likely a result of the fact that my participants were students, for whom the world of academics is particularly salient. It does raise the question, however, of how the results from Studies 1-4 may have been different had I employed academic role models in addition to the financial role models. Such a change may have made the results of
those studies stronger; this possibility is another avenue of inquiry suitable for future research.

Although I found some evidence that incremental theorists in Study 5 were motivated by the hardworking model, I did not find the corresponding effect on motivation to engage innate abilities by the talented model. It is possible that the talent condition role model profiles for Studies 4 and 5 did not sufficiently emphasize the absence of effort for the talent condition role model. Although I was careful to ensure that the talent condition role model claimed to have achieved effortless success, this may have been counteracted by participants’ existing expectations as to the importance of hard work—even for entity theorists. Recall that in Study 1 participants described hardworking role models far more often than talented role models. Perhaps participants who read about the talented role model assumed that he or she had worked hard, despite the fact that the profiles explicitly denied this. Trait ratings of the role models support this possibility: Although the hardworking role model was rated as being more hardworking than the talented role model, ratings of the extent to which the talented model was hardworking were still above the scale median.

9.1 Theoretical Implications

Studies 1, 2 and 3 make an important contribution to social comparison theory in psychology, in that they demonstrate that the source of a role model’s success determines the kind of motivation activated by the model. To date, the source of a role model’s success has not been examined as a variable in the social comparison literature; indeed, in the majority of studies, the source of an upward target’s success is not explained (e.g., Blanton, Buunk, Gibbons, & Kuyper, 1999; Brickman & Bulman, 1977; Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Lockwood &
Kunda, 1997, 1999; Lockwood et al. 2004; Lockwood et al., 2005; Marsh & Parker, 1984; Zell & Exline, 2010). Studies 1, 2 and 3 therefore represent a new facet for social comparison research, in that they demonstrate that both talented and hardworking role models are motivating, and that the source of a role model’s success matters in terms of the kind of motivation he or she provides.

Although my hypotheses for Study 5 were only partially supported, that experiment also makes a contribution to the literature on social comparison and implicit theories. In earlier research, incremental theorists were more motivated by upward comparisons than were entity theorists (Lockwood & Kunda, 1997); Study 5 expands upon that finding to show that this motivation effect is especially likely when the target is hardworking. In addition, previous research has shown that an individual’s implicit theory orientation can influence his or her selection of goals (Dweck & Leggett, 1988), and my experiment demonstrated that implicit theories can also influence the means by which individuals intend to pursue their goals. Incremental theorists who read about a hardworking role model were motivated to engage in corresponding behaviour: To put a great deal of effort into earning money or high grades.

9.2 Future Directions

9.2.1 Individual Differences

Although the present studies indicate that both hardworking and talented role models may be motivating, it will be important to examine individual differences in responses to these models; it may be that some individuals are especially motivated by others who achieve success through talent, and some individuals are especially motivated by models who have
worked hard. Although my hypotheses about implicit theories may only have been partially supported, other variables should be tested for possible relationships to motivation by talented and hardworking role models.

For instance, just world beliefs (Lerner, 1977) might predispose some people to be more motivated by either talented or hardworking role models. People who hold strong beliefs in a just world might be more motivated by a hardworking role model who appeals to their conviction that good things will come to those who are perceived to be deserving. These same people might be liable to believe that individuals who have exploited some innate talent will receive their “comeuppance” one day because they have become successful without working hard to deserve it. People who hold strong beliefs in a just world may perceive that any present success is likely to be temporary for such individuals. Those who do not hold strong beliefs in a just world may not be motivated by the hardworking role model, and they are less likely to expect that effort will pay off. However, they may be more motivated by the talented role models who have made the best of what they have.

Protestant work ethic might also be related in a similar way (Mirels & Garrett, 1971). Like individuals high in just world beliefs, people who hold strong Protestant work ethic beliefs would probably not be motivated by the talented role model. They might expect that the talented role model does not deserve his or her success, because he or she has not worked for it. People who endorse the Protestant work ethic may be motivated by the hard working role model who appeals to their beliefs that hard work is not only necessary, but virtuous.

Self-esteem is another individual difference variable that might help to explain who is most motivated by talented or hardworking role models. The precise relationship between social comparisons and self-esteem is a complex one. Across a variety of studies, high self-
esteem individuals have been found to respond to a superior other more positively (Gibbons & Gerrard, 1989), less positively (Brown, Novick, Lord, & Richards, 1992), or no differently (Aspinwall & Taylor, 1993) than did low self-esteem individuals. In terms of motivation by role models, I would not predict entirely symmetrical effects for people with high and low self-esteem. I expect that individuals with high self-esteem might be motivated by both the talented and the hardworking role models. High self-esteem people are known to be optimistic about their own future (Baumeister, 1998) and this might lead them to believe that they could emulate the success of either the hardworking or the talented role model. That is, I predict that these individuals would expect that if they work hard, they will be successful—thereby mimicking the hardworking role model—and also that they themselves have special talents that might be accessed, like the talented role model. People with high self-esteem might be more motivated by the talented role model than would people with low self-esteem because those with low self-esteem might be unlikely to expect that they too have talent to such degree that they might be able to emulate the success of the talented role model. I would expect that people with low self-esteem might only be motivated by the hardworking role model, and that even then their levels of motivation might be lower than the high self-esteem participants.

Conscientiousness might also help to determine who prefers talented or hardworking role models. Individuals high in conscientiousness might react more positively to the hardworking role model whom they see as a mirror to their own diligence. Those low in conscientiousness might be impressed by the talented role model who has managed to achieve success with seemingly minimal effort. However, it is possible that these effects might not be completely symmetrical in the types of motivation they inspire. Highly
conscientious individuals might be motivated both to work hard and to capitalize on their talents, because putting in effort to improve an existing talent might strike them as the most efficient use of their time. Less conscientious people, on the other hand, might be motivated to capitalize on their talents only after having read about the talented role model.

Thus, individual differences such as just world beliefs, Protestant work ethic, self-esteem and conscientiousness may comprise the focus of subsequent investigations. A more complete understanding of which people are most motivated by talented and hardworking role models will facilitate optimal applications for these models.

9.2.2 Culture

In addition to individual traits, culture may influence the extent to which people are motivated by talented and hardworking role models. Some cultures are known to emphasize the importance of hard work over talent. For instance, researchers in Japan note that their culture places substantial emphasis on the concept of hard work and perseverance (Shapiro & Hiatt, 1989). Furthermore, Japanese people (and East Asians more generally) are more likely to believe that achievement is primarily a function of effort than are North Americans (Singleton, 1995; Stevenson, 1995), and they often attribute their success primarily to effort rather than to their own abilities (Kitayama, Takagi, & Matsumoto, 1995). For North Americans, however, effort and ability are sometimes thought to be inversely related: having to try hard indicates that one is not skilled at a particular pursuit (Dweck & Leggett, 1988; Jussim, 1989). In future experiments, I would examine culture as a potential moderator of motivation by talented and hardworking role models. I would predict that East Asians might be motivated only by the hardworking role model, and that they would be motivated only to work hard. I would not expect to find particularly high levels of motivation to capitalize on
talents, as people from more collectivistic cultures may not believe that such a strategy is likely to lead to success, even if they’ve been exposed to a role model who claims to have done so.

9.2.3 Downward Comparisons

Future research may also focus on the impact of downward comparisons. Just as talented and hardworking role models inspire different behaviours, so might negative role models who have failed as a result of lack of talent or lack of effort. Upward comparisons are motivating because they provide models of desirable alternate selves— “I could be as successful as him/her.” Downward comparisons are motivating in a similar fashion: “If I do not take steps to prevent that outcome, I could wind up like him/her.” Indeed, there is evidence that downward comparisons can be motivating, especially when the comparer thinks he or she could be susceptible to the target’s fate (Lockwood, 2002). I would argue that the source of a downward comparison target’s failure might be important in determining the outcome of that comparison. Specifically, participants exposed to an individual who has failed as a result of insufficient effort might be motivated to work harder, whereas those exposed to an individual who has failed as a result of having no aptitude for a particular pursuit might be motivated to pursue things they know they are good at.

However, the impact of negative role models may not precisely mirror the results I have presented for upward comparisons. It might be that role models who have failed as a result of insufficient talent are far more threatening than those who have failed due to lack of effort if participants believe, for instance, that level of effort is easily rectified, whereas talent is hard to come by. A participant exposed to a comparison target who has failed as a result of insufficient effort may indeed be motivated— “I don’t want to end up like that person, so I’d
better make sure I work really hard!” Exposure to a model who has failed as a result of insufficient talent might be rather anxiety-provoking, leading people to worry that all their effort may be for nought if they have no particular talent for the domain in question. These possibilities will be examined in future research.

9.2.4 Behavioural Intentions and Behaviour

It is also important to note that the research presented here assessed behavioural intentions rather than the behaviours themselves. By showing that upward comparisons to financially successful role models can activate people’s desire to earn more money, these studies provide a first step in understanding how exemplars can influence fiduciary behaviour. Certainly there is evidence that behavioural intentions can predict behaviour (Ajzen 1991, 1996). Indeed, dependent variables tapping specific behavioural intentions are shown to be better predictors of behaviours than are vague intentions (Gollwitzer, 1999). Students in one study were more likely to follow through with plans to work on an assignment over a school holiday if they framed these plans in specific rather than vague terms. Dependent variable items for Studies 3-5 were designed with this finding in mind, in that I included very specific behaviours, such as “I plan to work more hours at my part time job in order to earn more money.” Nevertheless, in future research, it will be important to assess behaviour more directly. One way in which I might capture related behaviours would be to give participants the opportunity to pursue talent- or hard work-oriented financial opportunities. For instance, after reading about a talented or hardworking role model, participants could be offered the opportunity to attend a workshop on job search strategies that maximize one’s talent, or career opportunities in fields that require a great deal of hard work, but promise substantial rewards. The participants’ choice of workshop could then be
recorded and analyzed for a relationship with the role model condition. The same workshop paradigm could be applied to the academic domain, in that participants could be offered the chance to attend a workshop focused either on discovering one’s academic talents or finding more time to spend on course work.

I could also assess behavioural effects by comparing participants’ plans before they are exposed to a role model with their actual behaviour afterwards. I could ask the participants in academic-focused studies to list their plans for the rest of the day, or the following day, and then follow up with them to see what they actually did. I would expect that people who had been exposed to a hardworking role model would be more likely to follow through with plans to study or work on assignments, whereas those exposed to a talented role model would spend more time pursuing subjects they are good at. Ultimately, examining behavioural outcomes would help to facilitate real-world applications of this research.

9.3 Practical Implications

This research may have practical as well as theoretical implications. Role models are often used in campaigns to change attitudes or behaviour; the present research shows the importance of considering the source of a model’s success in boosting the model’s effectiveness. In selecting role models as motivators, the type of motivation desired should be taken into account. Thus, if one intends to motivate an individual to put more effort into a task, then a hardworking role model would likely be most effective, whereas if the goal of motivation is to encourage a person to make the most of what they have, a talented role model would be the better choice. For instance, if one were hoping to motivate job seekers to put more time and effort into their search, a hardworking role model might be most
effective. Such an individual could highlight the fact that their success is a result of
diligence, and that anyone could do the same thing. On the other hand, some circumstances
might be better suited to a talented role model. If one were hoping to motivate young people
to develop more specific career goals, a talented role model might be most effective. The
model could demonstrate how he or she chose a career based on aptitudes, and emphasize
that others should find their own strengths, and making use of their existing skills and the
resources at hand.

The present research findings can also help people to formulate their own role models
in order to optimize motivation. When drawing role models from their own lives, individuals
who hope to maximize their own skills might select or emphasize a role model’s talent.
Those who hope to devote more time and effort to a particular activity might select a role
model who has worked hard in a similar way. Alternately, they may choose to focus on these
qualities in role models they already have. Just as having the right tools gets the job done
more efficiently, careful choice of a role model is one more way in which people can
maximize the likelihood that their goal-pursuit activities will be successful. Whether they
seek to fully realize their existing skills or work hard at developing some ability, choosing
the right role model will help people to achieve their goals and meet their potential.
Ultimately, whether role models are selected or provided, they can help to light the way
forward to a brighter future in which people might reap the benefits of hard work or
maximized skills.
References


Appendix A – Study 2 Role Model Profiles

1 Hard work condition

1.1 Hardworking role model #1

Imagine a student who makes a lot of money in a summer job. This student works as a tree planter in Northern Ontario every summer. She sometimes works up to 13 hours a day when the weather is good. She is paid on a piecework basis - that is, she is paid per tree that she plants. She sets goals for herself and is always trying to plant more trees than she did the day before. Last year she was the fastest tree planter in the camp and earned a large sum of money. She now has considerably more money than any of her friends.

1.2 Hardworking role model #2

Imagine a student who works very hard in a part-time job. This student works more hours than any of the other staff and takes on overtime whenever she can. She works very hard and still goes to school full-time. Because this student works so many hours, she has a lot more money than most other students.

1.3 Hardworking role model #3

Imagine a student who works very hard in retail. This student has worked at the same store for several years. She is one of the top sales staff at the store, and earned more commission money than any other salespeople last year. She is doing very well because she works more hours than any other salespeople - whenever a coworker can’t come in, she offers to take the shift. She is much wealthier than most students because of her high commissions.
1.4 Hardworking role model #4

Imagine a student who earns a lot of money working in a restaurant. This student worked as a server at a large restaurant chain. She works a lot of hours and really makes an effort to do a good job. She earns good tips because she goes out of her way to treat customers well and make sure they get what they want. She earns significantly more in tips than she does for her salary. As a result, she has a lot more money than most of her friends.

2 Talent condition

2.1 Talented role model #1

Imagine a student who has patented a wonderful invention. She has always had a natural talent for creative thinking, and came up with an idea for a new battery design. A large manufacturing company bought the rights to the new battery and the student is now very rich.

2.2 Talented role model #2

Imagine a student who earned a lot of money by writing a novel. This student has always enjoyed writing and seemed to have a natural talent for it. She wrote a novel that became an instant bestseller, so that she earned a lot of money from royalties.
2.3 Talented role model #3

Imagine a student who is a very talented investor. She has a gift for following the financial markets and has made some very profitable investments. She has become wealthy by playing the stock market.

2.4 Talented role model #4

Imagine a student who won a lot of money playing online poker. This student is a skillful card player with a knack for poker. She started playing online poker a few years ago and is very talented. She has won a lot of money and is much wealthier than most other students as a result.
Appendix B – Study 3 Role Model Profiles

1 Talent

My name is Krista and I am in my final year of Arts and Science at U of T. I guess I am doing fairly well in school. I try to study regularly, and I guess get good grades. Mostly I get As and Bs, even though I sometimes leave my course assignments to the last minute. I have a few really close friends I hang out with; we have known each other since first year and spend lots of time together. In my spare time I like to follow the stock market—it’s sort of my hobby. It’s fun to do and I’ve made a lot of money at it. When I was little my grandfather showed me how to check stock market values in the newspaper, and ever since then I’ve paid attention to it. A few years ago I started investing money once in a while, just for fun. I’ve gotten pretty good at it, and now I’ve always got a few trades on the go. Stocks go up and down, but for the most part I’ve been really successful. I just have a knack for picking stocks, I guess. I’ve earned quite a lot of money over the years, and most of the time I re-invest it so it will grow. It’s great that I can earn so much money doing something that comes so easily to me. I definitely have more money than my friends. I am still in school, but with this money I have been able to travel and live a more expensive lifestyle than most other students. I have $20,000 in my bank account, and I plan to go on some more vacations.

2 Effort

My name is Krista and I am in my final year of Arts and Science at U of T. I guess I am doing fairly well in school. I try to study regularly, and I guess get good grades. Mostly I get
As and Bs, even though I sometimes leave my course assignments to the last minute. I have a few really close friends I hang out with; we have known each other since first year and spend lots of time together. Otherwise I work a lot! I have a part-time job, and I take as many hours there as I can get. I take overtime whenever I get the chance, and often I stay late if there’s more work to be done. I work right through the Christmas holidays, and most evenings and weekends. It’s tiring but it’s the only way to earn that kind of money, and I definitely have more money than any of my friends, and I’ve been able to pay my way through university. I am still in school, but with this money I have been able to travel and live a more expensive lifestyle than most other students. I have $20,000 in my bank account, and I plan to go on some more vacations.
Appendix C – Study 4 Role Model Profiles

1 Talent

My name is Krista and I am in my final year of Arts and Science at U of T. I guess I am doing fairly well in school. I try to study regularly, and I guess get good grades. Mostly I get As and Bs, even though I sometimes leave my course assignments to the last minute. I have a few really close friends I hang out with; we have known each other since first year and spend lots of time together. In my spare time I like to follow the stock market— it’s sort of my hobby. It’s fun to do and I’ve made a lot of money at it. When I was little my grandfather showed me how to check stock market values in the newspaper, and ever since then I’ve paid attention to it. A few years ago I started investing money once in a while, just for fun. I’m pretty good at it, and now I’ve always got a few trades on the go. Stocks go up and down, but for the most part I’ve been really successful. I just have a knack for picking stocks, I guess. I’ve earned quite a lot of money over the years, and most of the time I re-invest it so it will grow. It’s great that I can earn so much money doing something that comes so easily to me. I definitely have more money than my friends. I am still in school, but with this money I have been able to travel and live a more expensive lifestyle than most other students. I have $20,000 in my bank account, and I plan to go on some more vacations.

2 Effort

My name is Krista and I am in my final year of Arts and Science at U of T. I guess I am doing fairly well in school. I try to study regularly, and I guess get good grades. Mostly I get As and Bs, even though I sometimes leave my course assignments to the last minute. I have a
few really close friends I hang out with; we have known each other since first year and spend
lots of time together. In my spare time I like to follow the stock market- it’s sort of my
hobby. It’s a lot of hard work, but also fun to do and I’ve made a lot of money at it. When I
was little my grandfather showed me how to check stock market values in the newspaper,
and ever since then I’ve been reading up on all the business news. A few years ago I started
investing money once in a while, when I had done the research and decided that it was a
reasonable investment. With all the research I’ve done over the years, I’ve gotten pretty good
at spotting opportunities, and now I’ve always got a few trades on the go. I follow the stock
market every day, and I keep close watch on a few of my favourite financial blogs. Stocks go
up and down, but for the most part I’ve been really successful, probably because I’ve spent
so much time learning about the markets. I’ve earned quite a lot of money over the years, and
most of the time I re-invest it so it will grow. It’s great that I can earn so much money at it,
even if it does take a lot of effort. I definitely have more money than my friends. I am still in
school, but with this money I have been able to travel and live a more expensive lifestyle
than most other students. I have $20,000 in my bank account, and I plan to go on some more
vacations.
Appendix D – Study 5 Financial Role Model Profiles

1 Hardworking role model profiles

1.1 Informant #1
My friend Krista is in her final year of Arts and Science at U of T. She has a few really close friends she hangs out with; she has known them since first year and spends lots of time with them. Krista’s main hobby is stock market trading, which I thought was funny at first- until I saw how successful she is at it! She knows a whole lot about business stuff, and she’s worked really hard to learn how to pick stocks. She’s always reading the business section of the newspaper and checking websites for information. Krista has made a lot of money with her stock market hobby. With all that hard work she’s just a super financial whiz!

1.2 Informant #2
My housemate Krista is in 4th year. We have known each other since Frosh Week. Krista is a generally nice person, very friendly and upbeat. In her spare time she plays the stock market- quite successfully, I think. I asked her once if she had studied economics or done any special training, and she has- she told me she studied the markets for years before she made her first trade. I know she’s taken several personal investing workshops as well. I often see her reading the business section of the newspaper or checking up on business and investing blogs whenever she has a spare minute. Our friends sometimes ask her if all that reading is really necessary and she said she could never be a successful investor without it. I think she is a shrewd money manager in general. She’s always doing research to find out what the best credit card deal is for students, or how to earn top interest rates on savings. With all that
careful reading she has a really good sense for money. Krista has shown me that hard work is
the source of success.

1.3 Informant #3

Our roommate Kris is a 4th year Arts and Science major. We’ve been friends for about 4
years now. She and I play on a few intramural sports teams together, on and off. You know
how it is with casual sports leagues- everyone’s all into it for the first few weeks, and then
people get busy and stop showing up when midterms start. Kris was pretty good though- she
came to most of the games. Kris is really smart with money, she studies the economy a lot
even though she’s not taking business or anything. She’s always got great advice for when
you’re thinking of making a major purchase, I think because she’s a really careful
comparison shopper. Whatever it is I’m buying, like car insurance or important stuff like
that, I always ask Kris first. She’s always done the research and gives it 110%.

2 Talented role model profiles

2.1 Informant #1

My friend Krista is in her final year of Arts and Science at U of T. She has a few really close
friends she hangs out with; she has known them since first year and spends lots of time with
them. Krista’s main hobby is stock market trading, which I thought was funny at first- until I
saw how successful she is at it! She says she doesn’t know a whole lot about business stuff,
she just has a knack for picking stocks. Krista has made a lot of money with her stock market
hobby. She is just a super financial whiz!
2.2 Informant #2

My housemate Krista is in 4th year. We have known each other since Frosh Week. Krista is a generally nice person, very friendly and upbeat. In her spare time she plays the stock market—quite successfully, I think. I asked her once if she had studied economics or done any special training, but she said no—she doesn’t even keep up with the newspapers really. Picking stocks is just something she’s always been good at. Krista just has a natural talent for investing. I think she is a shrewd money manager in general. She always seems to know what the best credit card deal is for students, or how to earn top interest rates on savings. Krista has shown me that some people are just gifted when it comes to financial management.

2.3 Informant #3

Our roommate Kris is a 4th year Arts and Science major. We’ve been friends for about 4 years now. She and I play on a few intramural sports teams together, on and off. You know how it is with casual sports leagues—everyone’s all into it for the first few weeks, and then people get busy and stop showing up when midterms start. Kris was pretty good though—she came to most of the games. Kris is really smart with money, but she’s not taking business or anything. She just sort of knows about the important stuff, like the easiest way to pay your tuition, or the best deals for major purchases. Some people are just born that way, I guess.
Appendix E – Study 5 Academic Role Model Profiles

1 Hardworking role model profiles

1.1 Informant #1
My friend Krista is in her final year of Arts and Science at U of T. She has a few really close friends she hangs out with; she has known them since first year and spends lots of time with them. Krista is a really hard worker and she gets really high grades. She never misses class, and she’s always got the reading done before the lecture. She has had all As since starting university, which is pretty amazing. I think she does more studying than anyone else I know, but I guess it pays off because she gets really high marks. She’s just a super hard worker! She’s not like that with everything- there’s plenty of stuff she’s not so good at, but when it comes to grades, she’s always a hard worker.

1.2 Informant #2
My housemate Krista is in 4th year. We have known each other since Frosh Week. Krista is a generally nice person, very friendly and upbeat. She is a very dedicated student and she does extremely well in school. Krista puts a lot of effort into her studies. I’ve never heard her brag about it, but you eventually notice that she gets stellar marks on all of her assignments and that she’s studying all the time. I asked her once if she thinks that all that studying is really necessary and she said she’d never get high grades without it. I’ve seen it in courses we’ve taken together- she puts so much effort into her term papers and lab reports, and they are always very well written. She always writes multiple drafts and goes through revisions, and her work is excellent. The TA and instructor comments on her papers are always very
positive and complimentary of her analytical ability and writing style. Krista has shown me
that hard work is the source of success.

1.3 Informant #3

Our roommate Kris is a 4th year Arts and Science major. We’ve been friends for about 4
years now. She and I play on a few intramural sports teams together, on and off. You know
how it is with casual sports leagues- everyone’s all into it for the first few weeks, and then
people get busy and stop showing up when midterms start. Kris was pretty good though- she
came to most of the games, but she did miss a few. She’s getting really good as a strategic
player, very hardworking. I’ve never had any classes or anything with her, but she’s in the
same program as some of our other friends, and they all say she’s a very good student. She
studies all the time and gets awesome grades. I’ve noticed that she’s the type to always give
110%.

2 Talented role model profiles

2.1 Informant #1

My friend Krista is in her final year of Arts and Science at U of T. She has a few really close
friends she hangs out with; she has known them since first year and spends lots of time with
them. Krista is super smart- she gets really high grades and hardly ever studies. She just goes
to most of her lectures, skims the textbook and she can just remember everything. She has
had all As since starting university, which is pretty amazing. I think she does less studying
than anyone else I know, and she always gets really high marks. She’s just a super brainiac!
She’s not like that with everything- there’s plenty of stuff she’s not so good at, but when it comes to grades, she’s always totally amazing.

### 2.2 Informant #2

My housemate Krista is in 4th year. We have known each other since Frosh Week. Krista is a generally nice person, very friendly and upbeat. She does extremely well in school, almost without trying, I think. Krista just seems to have a natural intelligence- academic achievement comes easily to her. I’ve never heard her brag about it, but you eventually notice that she gets stellar marks on all of her assignments with minimal effort. I’ve seen it in courses we’ve taken together- she puts very little time into her term papers and lab reports, but they are always very well written. I’ve never known her to write multiple drafts or do any revisions, but her work is excellent nonetheless. The TA and instructor comments on her papers are always very positive and complimentary of her analytical ability and writing style. Krista has shown me that some people are just gifted academically.

### 2.3 Informant #3

Our roommate Kris is a 4th year Arts and Science major. We’ve been friends for about 4 years now. She and I play on a few intramural sports teams together, on and off. You know how it is with casual sports leagues- everyone’s all into it for the first few weeks, and then people get busy and stop showing up when midterms start. Kris was pretty good though- she came to most of the games but she did miss a few. She’s really good as a strategic player, very smart. I’ve never had any classes or anything with her, but she’s in the same program as some of our other friends, and they all say she’s a genius. She has awesome grades and hardly ever has to study for it. Some people are just born that way, I guess.