TO DO OR NOT TO DO: USING POSITIVE AND NEGATIVE ROLE MODELS TO HARNESS MOTIVATION

Penelope Lockwood
University of Toronto

Pamela Sadler
Wilfrid Laurier University

Keren Fyman and Sarah Tuck
University of Toronto

We examined role model preferences among individuals contemplating additive and subtractive behavior changes. Individuals considering engaging in a potentially beneficial activity, an additive behavior, were more likely to view positive models as effective motivators. Individuals considering abstaining from a potentially deleterious activity, a subtractive behavior, were more likely to view negative models as effective motivators. In addition, we examined the impact of participants’ regulatory focus on role model preferences. In Studies 1 and 2, we measured promotion and prevention focus directly. In Study 3, we used self–construals as an indirect measure of regulatory focus. In all studies, promotion–focused individuals were especially likely to prefer positive role models when contemplating additive behaviors; prevention–focused individuals were especially likely to prefer negative role models when contemplating subtractive behaviors.

The positive and negative examples set by high and low achievers can have a significant impact on the people around them. Positive role

This research was supported by a grant from the Social Sciences and Humanities Research Council of Canada (No. 410–99–1376) to Penelope Lockwood.

We are grateful to Ken Dion for his comments on an earlier version of this manuscript, and to Susan Furs for her assistance with data collection.

Address correspondence to Penelope Lockwood, Department of Psychology, University of Toronto, 100 St. George Street, Toronto, ON, Canada, M5S 3G3; E–mail may be sent to lockwood@psych.utoronto.ca.
models, individuals who have achieved a high degree of success, can encourage others to pursue similar accomplishments (Lockwood & Kunda, 1997). For example, an outstanding athlete can inspire others to exercise and thus improve their own physical condition. Negative role models, individuals who have experienced some kind of failure or misfortune, can motivate others to avoid similar adversity (Lockwood, 2002). For example, an individual who has injured another person as a result of drinking and driving can motivate others to avoid driving while drunk.

The effectiveness of such positive and negative role models may be influenced by the congruence between the desired behavior change and the strategy emphasized by the model. Role models can boost motivation through either additive or subtractive behavior changes. Additive behaviors involve adopting a potentially beneficial activity; for example, an individual can improve his or her health by exercising more often. Subtractive behaviors involve abstaining from or reducing a potentially deleterious activity; for example, a student can increase his or her academic success by cutting back on the amount of time he or she spends watching TV. Individuals’ inclinations to make these behavior changes can vary depending on whether the incentives for the changes are framed in terms of promoting a positive outcome or preventing a negative outcome. Prevention goals involve a concern with errors of commission, the avoidance of actions that could lead to an undesirable endstate (Higgins, 1997). Individuals seeking to avoid losses may therefore be especially likely to engage in subtractive behaviors; by reducing a behavior with potentially negative consequences, one can prevent an unpleasant outcome. Promotion goals, in contrast, involve the aim to avoid errors of omission, ensuring that one performs the actions that will lead to a desirable endstate (Higgins, 1997). Individuals seeking to achieve gains may therefore be especially likely to perform additive behaviors; by engaging in a behavior with potentially positive consequences, one can promote a successful outcome.

Consistent with this possibility, research from the literature on counterfactual thinking suggests that framing scenarios in prevention or promotion terms has implications for the kinds of behaviors that individuals select in order to mentally undo a negative outcome. In one study, for example, prevention counterfactuals, thoughts
about how a negative outcome could have been avoided, were associated with subtractive behaviors, deleting an action that produced the undesirable result. Promotion counterfactuals, thoughts about how a more positive outcome could have been achieved, were associated with additive behaviors, the adoption of an action that could have produced a more desirable result (Roese, Hur, & Pennington, 1999). Thus, the framing of the situation as a loss that could have been avoided was associated with subtractive behaviors, whereas the framing of the situation as a gain that could have been achieved was associated with additive behaviors.

Similarly, additive and subtractive behavior changes may be associated with different role model preferences. Sometimes, individuals will seek encouragement from the example set by a highly successful other, who illustrates the excellence that they may be able to achieve in the future (cf. Aspinwall, 1997; Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Collins, 1996; Taylor & Lobel, 1989; Taylor, Wayment & Carillo, 1996; Wood, 1989); at other times, they may try to motivate themselves by focusing on the example set by a highly unsuccessful other, who illustrates the problems that they must try to avoid in the future (Buunk et al., 1990; Wood & VanderZee, 1997). We propose that individuals will prefer role models who are congruent with their desired behavior change. When considering additive behaviors, individuals will show a preference for positive models, who represent a potential future gain; if a student wishes to sustain his or her motivation to go to the library more often, he or she will choose an exemplar of success, such as another student with an outstanding academic record. The successful other highlights a promotion strategy, the pursuit of achievement, and will therefore be motivating for individuals seeking to engage in potentially beneficial activities. In contrast, when considering subtractive behaviors, individuals will show a preference for negative models, who represent a potential future loss; if a student wishes to maintain his or her resolution to cut back on social activities that interfere with schoolwork, he or she will choose an exemplar of failure, such as another student who has dropped out of school. The unsuccessful other highlights a prevention strategy, the avoidance of failure, and will therefore be motivating for individuals seeking to abstain from potentially deleterious activities. Individuals are thus likely to select models that fit the desired behavior change: The better the fit between the behavior and the model, the more effective the model will
be perceived to be; by matching subtractive behaviors with negative models, and additive behaviors with positive models, individuals can attempt to maximize the motivation garnered from the models (cf. Higgins, 2000).

In addition, recent research suggests that individuals’ chronic regulatory goals will influence the relative effectiveness of positive and negative role models (Lockwood, Jordan, & Kunda, 2002). Individuals with strong promotion orientations tend to be sensitive to the presence or absence of positive outcomes (Higgins, 1997); they are especially likely to observe and recall information about success achieved by other individuals (Higgins & Tykocinski, 1992), and are also most likely to persist on tasks that are framed in terms of achieving gains rather than avoiding losses (Shah, Higgins, & Friedman, 1998). In general, promotion-focused individuals favor a strategy of pursuing success over a strategy of avoiding failure (Higgins, 1997; 1998). In past research, we found that these individuals are especially motivated by positive role models, who provide a vivid example of such success; the successful model highlights a strategy congruent with their goals (Lockwood et al., 2002).

In contrast, individuals with strong prevention orientations tend to be sensitive to the presence or absence of negative outcomes; they are especially likely to observe and recall information about failures experienced by other individuals (Higgins & Tykocinski, 1992), and are also more likely to persist on tasks that are framed in terms of avoiding losses rather than achieving gains (Shah et al., 1998). Prevention-focused individuals tend to prefer a strategy of avoiding failure over a strategy of achieving success (Higgins, 1997, 1998). These individuals are especially motivated by negative role models, who provide clear examples of such failures; the unsuccessful models highlight strategies that are congruent with their goals (Lockwood et al., 2002).

In the present research, we propose that an individual’s regulatory focus will be most influential in determining role model preferences when there is congruence between regulatory focus and behavior type. That is, promotion focus will be associated with a preference for positive models, particularly when individuals consider additive behavior changes: The promotion orientation and additive behavior type are both associated with the achievement of successes or gains, and it is under these circumstances that a positive role model will be perceived to be most useful. In contrast, prevention focus will be associated with a
preference for negative models, particularly when individuals consider subtractive behavior changes: The prevention orientation and subtractive behavior are both associated with the avoidance of failure or losses, and it is under these circumstances that a negative role model will be perceived to be most effective.

In sum, role models are most likely to be perceived to be effective motivators when both the type of behavior under consideration and the individual’s regulatory concerns are congruent with the strategy highlighted by the model. Individuals who are considering additive behaviors should be especially likely to use positive models as a means of harnessing their motivation, particularly to the extent that they have a strong promotion focus; in contrast, individuals who are considering subtractive behaviors should be especially likely to use negative models as a means of harnessing their motivation, particularly to the extent that they have a strong prevention focus.

In this article, we focus on individuals’ preferences for role models, rather than on the behavior changes that such role models may activate. Specifically, we are interested in whether individuals are more likely to choose a positive or negative role model when they are trying to engage their motivation for an additive or subtractive behavior. It is important to note, however, that self-reported preferences for role models may not always map onto actual behavior changes following exposure to such role models. Individuals may show a preference for positive models, for example, but might also be influenced by negative models. One’s beliefs that a specific role model will or will not be motivating may not always be accurate; at times, the impact of positive or negative role models on behavior may occur outside individuals’ awareness (Nisbett & Wilson, 1977). Preferences are nevertheless important, however, because they likely determine which kinds of role models individuals typically attend to and seize upon in their day to day lives as a means of keeping themselves engaged with their goals. To the extent that one expects to find a negative model to be motivating when one is trying to quit smoking, for example, one may actively seek out the example of an individual who has experienced smoking-related health problems. By understanding how individuals select role models, we gain insight into how people seek to use successful and unsuccessful others around them in an attempt to harness motivation over the longer term.
In three studies, we examined whether the type of behavior (additive or subtractive) and regulatory focus (promotion or prevention) would determine participants’ preferences for positive relative to negative role models. In Studies 1 and 2, we measured regulatory focus directly, and examined preferences for academic (Study 1) and health–related (Study 2) role models. In Study 3, we selected participants from cultures known to differ in their emphasis on promotion and prevention concerns (Lee, Aaker, & Gardner, 2000), and assessed their preferences for academic role models. In all studies, we expected that participants considering additive behavior changes would perceive positive models to be more motivating, and that participants considering subtractive behavior changes would perceive negative models to be more motivating. We also attempted to replicate and extend previous research showing that participants’ own regulatory orientations can influence role model preferences; specifically, we examined whether participants’ regulatory concerns would be most strongly associated with motivation by congruent role models when the desired behavior change was also congruent with their concerns. We expected that promotion focus would be most strongly associated with a preference for positive role models among individuals considering additive behavior changes, and prevention focus would be most strongly associated with a preference for negative role models among individuals considering subtractive behavior changes.

STUDY 1: ADDITIVE AND SUBTRACTIVE BEHAVIORS ARE ASSOCIATED WITH DIFFERENT ACADEMIC ROLE MODEL PREFERENCES

In Study 1, we examined whether students would express a preference for positive or negative academic role models when considering additive and subtractive behaviors. In order to achieve a desired academic outcome, students may choose to focus on additive behaviors, such as going to the library more frequently; alternatively, they may choose to focus on subtractive behaviors, such as cutting back on social activities that interfere with their schoolwork. Both kinds of behaviors may have a positive impact on their grades. These different kinds of behaviors, however, may prompt different choices of role models. We expected that individuals would prefer role models that were congruent with the desired behavior change. When consider-
ing adding potentially beneficial behaviors, participants would show a preference for positive models; when considering subtracting potentially detrimental behaviors, participants would show a preference for negative models.

In addition, we expected that regulatory focus would predict role model preferences for behavior changes congruent with the focus: Promotion focus would be especially strongly associated with a preference for positive role models when individuals considered additive behaviors; in contrast, prevention focus would be especially strongly associated with a preference for negative role models when individuals considered subtractive behaviors.

METHOD

PARTICIPANTS

Participants were 17 male and 51 female Introductory Psychology students at the University of Toronto who received course credit for their participation. Participants’ gender had no effects on any of the variables and is therefore not discussed further.

PROCEDURE

Participants were told that the researchers were interested in finding out how people motivate themselves: “Sometimes, we are motivated to try to avoid becoming like a person who is experiencing problems, and sometimes we are motivated to try to become like a person who is experiencing success. Both positive and negative examples can motivate us to change our behaviors. The following task involves answering questions about which kind of person is more likely to motivate YOU in different situations.” Participants were then asked to indicate whether they would be more motivated by a positive or a negative role model to perform a series of 12 behaviors. Six of the behaviors were additive (e.g., develop better study habits, spend more time studying, try to get more As) and six were subtractive (e.g., spend less time partying with friends, procrastinate less, stop falling behind in readings). For each item, participants rated on a seven-point scale whether they would be more motivated by a negative or positive model to perform this behavior. The scale labels ranged from –3 (negative role model is more motivating) to 0 (neg-
tive and positive models are equally motivating) to +3 (positive role model is more motivating). A different example of a negative and a corresponding positive role model was included for each item (e.g., “someone who is on academic probation for poor performance” vs. “someone who has won an award for academic achievement”; “someone from your program who has been unemployed since graduating last year” vs. “someone from your program who landed a great job after graduating last year”). The additive behavior items were combined into a single index (alpha = .70); the subtractive behavior items were also combined into a single index (alpha = .71). We had expected that the additive and subtractive items would load onto two different factors; unexpectedly, however, a factor analysis did not reveal a clear distinction between the additive and subtractive item loadings. Nonetheless, the predicted mean differences did emerge, as will be discussed below.

Participants also completed an 18–item measure of regulatory focus (Lockwood, Jordan, & Kunda, 2002). This measure includes a promotion and a prevention subscale; both were reliable (promotion alpha = .83, prevention alpha = .84). The subscales were not significantly correlated, \( r = -.18, p = .13 \). In general, participants reported higher promotion \( (M = 7.15) \) than prevention \( (M = 5.63) \) orientations, \( t(67) = 6.23, p < .001 \).

RESULTS AND DISCUSSION

To test whether behavior framing would influence role model preference, we conducted a repeated measures Analysis of Variance (ANOVA), with behavior type (additive or subtractive) as the within–participants variable. As expected, participants were more likely to select a positive role model when the behavior change was described in additive terms \( (M = 1.71) \) rather than subtractive terms \( (M = .48) \), \( F (1, 67) = 68.94, p < .001 \).

Next, we assessed whether regulatory focus would be more predictive of role model preferences when the focus was congruent with the desired behavior change. That is, role model preference for additive behaviors should be predicted chiefly by promotion focus, rather than prevention focus. This relationship should be positive because higher promotion focus should lead to a preference for a positive role model for additive behaviors. In contrast, role model preference for subtractive behaviors should be predicted chiefly by
prevention focus, rather than by promotion focus. This relationship should be negative because higher prevention focus should lead to a preference for a negative role model for subtractive behaviors. To evaluate these hypotheses, we estimated the structural equation model shown in Figure 1. This just-identified model consists of two simultaneous regressions, one for role model preference for additive behaviors and the other for role model preference for subtractive behaviors. According to the congruency hypothesis for additive behaviors, path $A$ should be significantly stronger than path $C$. Likewise, for subtractive behaviors, path $D$ should be significantly stronger than path $B$. Structural equation modeling allows us to test whether such pairs of paths are significantly different by setting those paths equal to each other and evaluating model fit. As seen in the diagram, promotion and prevention goals were allowed to covary, as were the residuals for role model preference for additive and subtractive behaviors, $Z_1$ and $Z_2$.

The parameter estimates for this model are shown in Figure 2. As predicted, role model preference for additive behaviors showed a significantly positive association with promotion focus, but a nonsignificant negative relationship with prevention focus. The former path was significantly stronger than the latter path, $\chi^2(1, N = 68) = 13.48, p < .001$. Role model preference for subtractive behaviors showed a significantly negative association with prevention focus,
as predicted. Contrary to our predictions, however, promotion focus was positively associated with role model preference. These two paths were significantly different, $\chi^2 (1, N = 68) = 16.47, p < .001$.

In sum, both the framing of the desired behavior and individuals’ regulatory focus influenced participants’ preferences for positive relative to negative role models as motivators. As expected, participants indicated that the positive models would be more motivating relative to negative role models when the behavior was additive rather than subtractive. However, we found mixed support for our hypothesis that regulatory focus would predict role model preferences only for congruent behavior changes: As expected, prevention predicted role model preferences only for the subtractive behaviors. Promotion, in contrast, was associated with a preference for positive models for both additive and subtractive behaviors. Promotion focus may therefore be important in guiding role model preferences for both additive and subtractive behaviors.

STUDY 2: ADDITIVE AND SUBTRACTIVE BEHAVIORS ARE ASSOCIATED WITH DIFFERENT HEALTH–RELATED ROLE MODEL PREFERENCES

In Study 1, we focused on academic role models, and students’ motivation to engage in additive and subtractive behaviors relevant to academic success. We would expect to find similar effects, however, in any domain in which a desired outcome can be achieved through additive and subtractive behaviors. For example, in order to achieve a healthy, desirable body image, individuals frequently try to cut back on high–fat foods, a subtractive behavior, or increase their physical activity, an additive behavior; both forms of behavior are expected to improve one’s health and physical appearance. In line with our reasoning that role models will be perceived as effective motivators when they highlight a strategy congruent with the behavior, we would expect that negative models will be viewed as more effective when individuals consider reducing the fat in their diet; although one could frame this activity as additive (i.e., going on a diet), the specific behaviors involved are generally subtractive (i.e., decreasing amount of food consumed, cutting back on fat, reducing calorie intake). In contrast, we would expect that positive models will be viewed as more effective when individuals contemplate increased exercise, an additive
behavior. We examined this possibility in Study 2.

We also used Study 2 to seek further support for our hypothesis that regulatory focus will be most strongly related to role model preferences when individuals are considering a behavior that is congruent with the regulatory goal. In Study 1, contrary to our predictions, promotion goals were associated with role model preferences for both additive and subtractive behaviors. It may be the case that university students habitually consider academic motivation in promotion rather than prevention terms; these first–year students, who had

1. We characterized diet–related changes as subtractive behaviors and activity–related behaviors as additive behaviors because we believed that the diet/subtractive and exercise/additive distinction would reflect a natural separation in the way people think about these health–related behaviors. That is, people who are trying to change their activity level are especially likely to think in terms of starting an exercise program or joining a gym rather than spending less time watching TV or spending less time sitting in front of a computer. One may spend less time watching TV, but this will not necessarily be a healthy change if one replaces this activity with other equally sedentary activities. Similarly, although improving one’s eating habits may include additive behaviors, such as increasing fiber consumption, the primary food–related change with which people wrestle is likely to be the reduction of fat and/or calories in their diet. Indeed, although 59% of Canadians report concern about the level of fat in their diet, only 26% report concern about their carbohydrate and fiber intake (Health Canada, 1999). Thus, individuals are more likely to try to engage in diet–related health behaviors that are subtractive (reducing fat) rather than additive (increasing fiber).
extremely high averages when graduating from high school, may not have been accustomed to think in terms of avoiding academic failure because such failures have not been a relevant past experience for them. In Study 2, we assessed role models in a domain in which both promotion and prevention goals may be strong: Most individuals have at some point felt uncomfortable with their body shape; consequently, they may have goals to prevent an unhealthy body image as well as to promote a more positive body image. Thus, health–related prevention goals may be most strongly associated with restricting food intake, whereas health–related promotion goals may be most strongly associated with increasing physical activity.

Participants rated the extent to which they would be motivated to engage in diet–related (cutting back on food) and exercise (increasing physical activity) behaviors by role models in poor physical shape or excellent physical shape. We also assessed participants’ health–related promotion and prevention focus. We expected that participants would view an out–of–shape model as most motivating when they were contemplating eating less, but would view a very fit model as most motivating when they were contemplating exercising more. We also expected that participants’ regulatory focus would influence their preferences for models: When contemplating additive behaviors, in-

FIGURE 3. Role model preferences as a function of promotion and prevention goals (Study 2).

Note. Because the parameters that are set equal are for the unstandardized variables, the results are reported for variables in their raw score form. *p < .05, **p < .005, ***p < .001.
Individuals with strong, health–related promotion orientations should view positive models as more effective relative to negative models; when contemplating subtractive behaviors, individuals with strong health–related prevention orientations should view negative models as more effective relative to positive models.

**METHOD**

**PARTICIPANTS**

Participants were 30 male and 36 female Introductory Psychology students at the University of Toronto who took part in the study for course credit. Gender had no impact on any of the variables; therefore gender is not discussed further.

**PROCEDURE**

As in Study 1, participants were asked to indicate the degree to which they would be more motivated by a positive or a negative role model to perform a series of ten behaviors. Five of the behaviors were additive (e.g., exercise more, be more active, go to a gym more often) and five were subtractive (e.g., eat less, cut back on fatty foods, try to keep my weight down). For each item, participants rated on a seven–point scale whether they would be more motivated by a negative or a corresponding positive model (e.g., “a person in terrible physical shape” vs. “a person who is in excellent physical shape”; “a person who is weak and flabby” vs. “a person who is healthy and toned”) to perform this behavior. Ratings were made on the same seven–point scale used in Study 1, with higher scores indicating greater motivation by positive relative to negative models. Both the additive behavior subscale and the subtractive behavior subscale were reliable (alphas = .82 and .86, respectively). A factor analysis using an oblique rotation yielded two distinct factors: Additive items formed one factor, with loadings ranging from .546 to .905; subtractive items formed a second factor, with loadings ranging from .501 to .903. The two factors were correlated, $r = .36$, and together explained 63 percent of the variance.

Participants also completed a measure of health–related regulatory focus. This measure was similar to the regulatory focus scale used in Study 1, but was modified to target health–related concerns.
Six items were related to promotion focus (e.g., “My major health–related goal right now is to increase my level of physical fitness,” “I am more oriented toward improving my health than avoiding illness”) and six items were related to prevention focus (e.g., “My major health–related goal right now is to avoid experiencing health problems,” “I am more oriented toward avoiding health problems than achieving good health”). Both subscales were reliable (promotion alpha = .81, prevention alpha = .80). The subscales were modestly correlated, $r = .30$, $p = .01$. In general, participants reported higher promotion ($M = 5.95$) than prevention ($M = 3.92$) health goals, $t(65) = 8.00$, $p < .001$.

RESULTS AND DISCUSSION

As in Study 1, we conducted a repeated measures ANOVA, with behavior type (additive or subtractive) as the within–participants variable. As we had predicted, participants were more likely to select a positive role model when the behavior change was described in additive terms ($M = 2.12$) rather than subtractive terms ($M = 1.09$), $F(1, 65) = 40.11$, $p < .001$.

We next examined the possibility that regulatory focus would be more predictive of role model preferences when this focus was congruent with the desired behavior change. To test this possibility, we estimated the structural equation model shown in Figure 1, utilizing the same data analytic strategy we applied in Study 1. The parameter estimates for this model are shown in Figure 3. As predicted, role model preference for additive behaviors showed a significantly positive association with promotion focus, but a nonsignificant negative relationship with prevention focus. The former path was significantly stronger than the latter path, $\chi^2(1, N = 66) = 9.87, p < .005$. Also consistent with our hypotheses, role model preference for subtractive behaviors showed a significantly negative association with prevention focus, but a non–significant positive relationship with promotion focus. However, although coefficients for these paths were in accordance with our predictions, the two paths were not significantly different, $\chi^2(1, N = 66) = 1.85, p = .17$.

Overall, the results of Study 2 are consistent with those of Study 1. In both studies, the perceived effectiveness of positive relative to negative role models was determined by both the type of behavior,
additive or subtractive, and participants’ regulatory orientation, promotion or prevention. Participants were most likely to perceive a positive model to be motivating when considering additive behaviors, particularly to the extent that their promotion orientation was strong. Participants were most likely to perceive a negative model to be motivating when considering subtractive behaviors, and this effect tended to be strongest when prevention orientation was strong.

In both studies, participants showed a strong preference for positive relative to negative models. Recent research suggests that the strength of promotion and prevention orientations varies from culture to culture; North Americans tend to have an especially strong focus on promotion (e.g., Lee et al., 2000). Consistent with this finding, in the present studies, participants reported stronger promotion than prevention orientations. In cultures in which prevention focus is more strongly emphasized, however, preferences for negative role models may be stronger. We examined this possibility in a third study.

**STUDY 3: SELF–CONSTRUALS PREDICT ROLE MODEL PREFERENCES AMONG INDIVIDUALS CONSIDERING ADDITIVE AND SUBTRACTIVE BEHAVIORS**

In Study 3, we examined the importance of additive and subtractive behaviors in determining role model preferences across different cultural groups. We examined two groups that have been found to differ in their emphasis on promotion and prevention goals: We compared the role model preferences of North Americans, who tend to have especially strong promotion goals, with those of East Asians, who tend to have especially strong prevention goals (Elliot, Chirkov, Kim, & Sheldon, 2001; Lee et al., 2000).

North American culture tends to emphasize the importance of independent self–construals, focusing on the self as a separate, unique individual (for reviews, see Markus & Kitayama, 1991; Triandis, 1989); individuals with strongly independent self–construals pursue personal achievements that will help them stand out from their group as especially successful individuals (Heine & Lehman, 1997). The promotion–focused strategy of pursuing gains should be especially appealing to highly independent individuals, who are bent on achieving personal accomplishments. Thus, we would expect higher
levels of independence to be associated with a stronger promotion orientation: In one study, for example, individuals who were primed with independence, or who were members of cultural groups known to emphasize independence, tended to view events framed in terms of promoting gains as more important than events framed in terms of preventing losses (Lee et al., 2000); another set of studies found that individuals who scored higher on independence tended to report more approach relative to avoidance goals (Elliot et al., 2001). We would therefore expect that individuals with strongly independent self-construals will choose positive role models as a mean of harnessing their motivation; outstanding models provide an example of the accomplishments for which they are striving, and highlight the strategies needed to achieve such success. Indeed, previous research found that European Canadian students, who have strongly independent self-construals, were more motivated by another student who had received awards for outstanding achievements than by a student who had been placed on probation due to poor academic performance (Lockwood, Marshall, & Sadler, in press).

In contrast, East Asian cultures tend to emphasize the importance of interdependent self-construals, focusing on the self as part of an interconnected set of social relationships; individuals with highly interdependent self-construals are concerned with maintaining harmony within their group, and avoid negative behaviors that could disrupt their web of social relationships (Markus & Kitayama, 1991; Triandis, 1989). For such individuals, who are bent on avoiding behaviors that might disturb social connections or disappoint significant others in their lives, a prevention-focused strategy of avoiding problems should be especially appealing. We would therefore expect higher levels of interdependence to be associated with a greater emphasis on prevention. Indeed, one set of studies found that individuals who were primed with interdependence, or who were members of cultural groups known to emphasize interdependence, tended to view events framed in terms of preventing losses to be more important than events framed in terms of promoting gains (Lee et al., 2000); another set of studies found that higher levels of interdependence were associated with more avoidance relative to approach goals (Elliot et al. 2001). We would therefore expect that individuals with strongly interdependent self-construals will be especially likely to choose negative role models as a means of harnessing their motivation; the models provide an ex-
ample of the problems that they seek to avoid, and highlight the strategies needed to avert such difficulties in the future. Indeed, previous research found that Asian Canadian students, who have strongly interdependent self–construals, were more motivated by an unsuccessful than a successful student (Lockwood, Marshall, & Sadler, in press).

Self–construals may be especially influential in determining role model preferences to the extent that the self–construals are congruent with the desired behavior change. Additive behaviors are associated with promotion goals; independent self–construals, which foster such promotion concerns, may therefore be especially predictive of a preference for positive role models when individuals are considering starting a new, potentially beneficial behavior. Subtractive behaviors, in contrast, are associated with prevention goals; interdependent self–construals, which foster such prevention concerns, may therefore

FIGURE 4. Role model preferences of European Canadians and Asian Canadians considering additive and subtractive academic behaviors (Study 3).
be especially predictive of a preference for negative role models when individuals are considering cutting back on a potentially deleterious behavior. We examined this possibility in Study 3.

We selected participants from cultural groups previously found to differ in self-construals: Asian Canadians and European Canadians (Heine, Lehman, Markus, & Kitayama et al., 1999). Student participants from these groups indicated whether they would be more motivated by negative or positive academic role models when contemplating additive or subtractive behavior changes. We expected that, as in Studies 1 and 2, participants would prefer positive models when contemplating additive behaviors, and negative models when contemplating subtractive behaviors. In addition, we expected that Asian Canadian students would show a general preference for negative role models, whereas European Canadian students would show a preference for positive role models. Finally, we predicted that self-construals would mirror the pattern of findings obtained for regulatory focus in Studies 1 and 2: That is, independent self-construals would be most strongly associated with a preference for positive models in additive situations, and interdependent self-construals would be most strongly associated with a preference for negative models in subtractive situations.

METHOD

PARTICIPANTS

Participants were 45 Asian Canadian (20 males and 25 females) and 22 European Canadian (9 males and 13 females) Introductory Psychology students who received course credit for taking part in the study. Asian Canadian participants were selected if they indicated on a larger prescreening questionnaire that they were born in an East Asian country (i.e., China, Hong Kong, Japan, Korea, Taiwan), and identified their cultural background as East Asian; European Canadian participants were selected if they indicated that they were born in Canada, and identified their cultural background as Western European. Asian Canadians had lived in Canada an average of 7.37 years, and European Canadians had lived in Canada since birth. Asian Canadian ($M = 20.36$) and European Canadian ($M = 20.59$) participants did not differ in age, $F < 1$. Participants’ gender had no effect
on any of the dependent variables, and therefore is not discussed further.

PROCEDURE

As in Study 1, participants were invited to take part in a study on adjustment to university life, and completed the same measure assessing

2. One additive item, “try harder to get more As” loaded relatively poorly onto both factors; because these students had recently completed high school with very high averages, and were expecting to excel academically, this item should perhaps have been worded instead as “try to get more A+s.” One subtractive item, “try to procrastinate less,” loaded somewhat poorly onto the subtractive factor; possibly, students are accustomed to associate procrastination–reduction with improving study skills because these two behaviors are often grouped together in such activities as study skills courses.

3. In previous research, we found that these two self-construal subscales showed the predicted pattern of associations with the regulatory focus scale used in Studies 1 and 2. For example, in one study (N = 81), independence was positively correlated with the promotion subscale (r = .22, p = .05) but not with the prevention subscale (r = -.12, p = .31); interdependence was positively correlated with the prevention subscale (r = .30, p = .007), but not with the promotion subscale (r = -.08, p = .46; Lockwood, Marshall, & Sadler, in press).
whether they would be more motivated to perform additive and subtractive academic behaviors by negative or positive role models. Because the factor structure in Study 1 did not yield two distinct factors, however, wordings for the items were altered slightly to emphasize the additive or subtractive nature of the behaviors. For example, one additive item worded “be focused on school” in Study 1 was changed to “focus harder on school” in Study 2, making it clear that the behavior involved starting something new. A factor analysis using an oblique rotation yielded two distinct factors: As predicted, additive items formed one factor, with five of the six additive item loadings ranging from .691 to .769. Subtractive items formed a second factor, with five of the six item loadings ranging from .551 to .838. The two factors were modestly correlated, \( r = .27 \), and together explained 49% of the variance. Overall, this analysis provided evidence that the additive and subtractive behaviors formed separate factors.

After completing the role model preference scale, participants completed Singelis’s (1994) Independence/Interdependence Scale.

**RESULTS AND DISCUSSION**

To test whether behavior framing and cultural background would influence role model preferences, we conducted a 2 × 2 mixed factorial ANOVA with behavior type (additive or subtractive) as the within–participants variable and cultural background (Western European or East Asian) as the between–participants variable. The main effect of behavior type was significant, \( F(1, 65) = 58.39, p < .0001 \) (see Figure 4). As in Study 1, participants reported a stronger preference for positive relative to negative role models for additive behaviors (\( M = 1.35 \)) than for subtractive behaviors (\( M = .12 \)). The main effect of cultural background was also significant, \( F(1, 65) = 4.74, p = .03 \). European Canadian participants reported a stronger preference for positive relative to negative role models (\( M = 1.14 \)) than did Asian Canadian participants (\( M = .54 \)). The behavior type by cultural background interaction was not significant, \( F < 1 \).

We next examined self-construals as predictors of role model preferences. Both the independent and interdependent self-construal subscales were moderately reliable (alphas = .60 and .64, respectively). European Canadian participants reported marginally higher independent self-construals (\( M = 4.87 \)) than did Asian Canadian participants (\( M = 4.54 \)), \( F(1, 65) = 3.17, p = .08 \). In contrast, Asian Ca-
nadian participants reported marginally higher interdependent self–construals ($M = 4.85$) than did European Canadian participants ($M = 4.53$), $F (1, 65) = 2.92, p = .09$. The relatively weak differences in self–construals between Asian Canadian and European Canadian participants may be due to the fact that many of the Asian Canadian participants had been living in Canada for several years; prolonged exposure to North American cultural values may have resulted in increased independence and decreased interdependence among these participants. We note, however, that recent research suggests that East Asians living in a North American context may actually report relatively high levels of interdependence when self–construals are measured with subjective Likert scales, because they use North Americans as their reference group (Heine, Lehman, Peng, & Greenholtz, 2002). Thus, the weak differences in self–construals obtained in this sample may not be the result of acculturation, but rather may simply reflect the fact that differences in self–construals between East Asians and North Americans tend to be relatively small (Oyserman, Coon, & Kemmelmeier, 2002). In any case, our hypotheses specifically concerned the relationship between self–construals and preferences for role models, which can also be examined without specific reference to cultural groups.

We expected that independent self–construals, which are closely associated with promotion goals (Elliot et al., 2001; Lee et al., 2000; Lockwood, Marshall, & Sadler, in press), would be especially important in additive situations; thus, role model preferences for additive behaviors should be predicted chiefly by independent self–construals, rather than interdependent self–construals. In contrast, we expected that interdependent self–construals, which are closely associated with prevention goals, would be especially important in subtractive situations; thus, role model preferences for subtractive behaviors should be predicted chiefly by interdependent self–construals, rather than by independent self–construals. To evaluate these hypotheses, we estimated the structural equation model shown in Figure 1, using independence in place of promotion, and interdependence in place of prevention.

The parameter estimates for this model are shown in Figure 5. As predicted, role model preference for additive behaviors showed a significantly positive association with independent self–construals, but a nonsignificant negative relationship with interdependent
self–construals. The difference between these paths approached significance, $\chi^2 (1, N = 67) = 3.19, p = .07$. Also consistent with our hypotheses, role model preference for subtractive behaviors showed a significantly negative association with interdependent self–construals, but a nonsignificant positive relationship with independent self–construals. The former path was significantly stronger than the latter path, $\chi^2 (1, N = 67) = 5.06, p = .02$.

Overall, Study 3 provides a conceptual replication of the findings of Studies 1 and 2. As in Studies 1 and 2, participants reported a greater preference for positive relative to negative role models when considering additive rather than subtractive behaviors. In addition, individuals from a culture that emphasizes promotion concerns, the European Canadian participants, reported a greater preference for positive relative to negative role models; individuals from a culture that emphasizes prevention concerns, the Asian Canadian participants, reported a weaker preference for positive relative to negative role models. Finally, interdependent self–construals, which are associated with strong prevention concerns, predicted motivation by negative models when participants contemplated subtractive behaviors; independent self–construals, which are associated with strong promotion concerns, predicted motivation by positive models when participants contemplated additive behaviors. The congruence between regulatory concerns and behavior type thus appears to play an important role in determining the perceived motivating influence of negative and positive role models. Different cultures tend to foster different self–construals, which in turn are associated with different regulatory strategies. In more interdependence–oriented cultures, which highlight prevention concerns, negative exemplars may be especially effective when individuals are seeking subtractive behavior changes; in more independence–oriented cultures, which highlight promotion concerns, positive exemplars may be especially effective when individuals are seeking additive behavior changes.

**GENERAL DISCUSSION**

When individuals consider engaging in a potentially beneficial activity, an additive behavior, they are more likely to choose positive role models as a means of harnessing their motivation; when individuals consider reducing a potentially deleterious activity, a subtractive be-
behavior, they are more likely to choose negative role models as a means of sustaining their motivation. In addition, participants’ own regulatory orientations influence their role model preferences: When contemplating additive behaviors, such as increasing exercise or studying harder, individuals with a stronger focus on promotion are especially likely to select positive models; when considering subtractive behaviors, such as cutting back on high-fat foods or reducing procrastination, individuals with a stronger focus on prevention are especially likely to select negative role models.

Traditionally, social comparison research examining individuals’ preferences for comparison targets has suggested that, whereas individuals will choose comparisons to better-off others when they are concerned with self-improvement, they will choose comparisons to worse-off others when they are seeking to self-enhance (e.g., Taylor & Lobel, 1989; Wills, 1981). A more successful other demonstrates achievements for which one can strive; in contrast, a worse-off other provides reassurance by highlighting one’s own relative superiority. The present studies, however, indicate that individuals may use either better- or worse-off others to serve self-improvement goals, and highlight the circumstances under which each form of comparison may be most effective. Better-off others may be particularly useful guides for self-improvement for individuals who are seeking to start new, potentially beneficial activities; worse-off others, in contrast, may be more useful for individuals who are seeking to avoid potentially harmful activities. In addition, these studies highlight the importance of regulatory focus in determining when individuals will select upward and downward comparison targets as role models. Past research indicates that promotion focus is associated with an especially strong preference for positive relative to negative role models (Lockwood et al., 2002); however, the present studies suggest that this will be true only for additive behaviors. When individuals are considering subtractive behaviors, prevention focus will be more likely to determine role model preferences.

Interestingly, in all studies, participants reported a general preference for positive over negative role models. Even when contemplating subtractive behaviors, participants expected to be about equally motivated by positive and negative role models. The general lack of preference for negative models may in part stem from social desirability concerns; participants may have felt uncomfortable admitting
that they would try to profit from the misfortunes of another person by using the other’s failure to motivate themselves. In addition, participants in these studies were students at a North American university; in this context, promotion goals may have been especially salient. Even the Asian Canadian participants in Study 3 had presumably been exposed to a significant amount of North American culture in the course of their studies, and may consequently have developed stronger promotion orientations; thus, it is not altogether surprising that these participants preferred positive to negative role models.

Nevertheless, these studies do suggest that members of individualistic and collectivistic cultures may differ in how they use role models to harness motivation. In cultures that emphasize independence, individuals may work toward positive outcomes by adopting activities that they perceive to be positively associated with success; in order to sustain their motivation, they may focus on examples of individuals who have attained outstanding achievements as a result of adopting such behaviors. In cultures that emphasize interdependence, individuals may instead be more likely to seek positive outcomes by cutting back on activities that will interfere with success; in order to maintain their motivation, they may focus on examples of individuals who have suffered hardship as a result of engaging in such negative behaviors. Finally, individuals who have been exposed to both individualistic and collectivistic cultures may use both positive and negative examples to harness their motivation.

Rather than examining participants’ preferences for positive and negative role models independently, the present studies forced participants to choose between the two: We asked them to indicate, for each additive and subtractive behavior, the degree to which they would find a positive model relative to a negative role model to be motivating. We thus attempted to create a situation in which an individual had to settle on a specific exemplar as a motivational guide. For example, someone who is trying to improve his or her physique may tape to his or her mirror a photograph of an exemplar with a desirable figure, as an incentive to self-improve, or a photograph of an exemplar with an undesirable figure, as an incentive to avoid failure. We were specifically interested in which kind of role model individuals would find to be relatively more appealing in different circumstances. Indeed, many campaigns that use role models to promote
behavior changes highlight the example of either a positive or a negative model, rather than both together; if one wishes to maximize the effectiveness of such a program, it is important to know which model is likely to be most motivating. Of course, it is also possible that individuals might at times use both kinds of role models simultaneously as a means of harnessing their motivation. In future research, it will be useful to examine preferences for each kind of model independently, and the extent to which individuals use multiple role models to motivate themselves.

This research has practical implications for programs that seek to change behavior in a target group. Some programs may be able to achieve desired behavior changes by using models associated with either additive or subtractive behaviors. For example, a company that seeks to boost worker productivity may be able to enhance employees' efforts by using a positive model, such as an employee who has received accolades for his or her achievements; alternatively, the company may try to reduce social loafing by using a negative model, such as an employee who has been fired due to insufficient output. Both the additive behavior change, increasing effort, and the subtractive behavior change, reducing social loafing, may lead to the desired result: increased productivity. In the present research, we focused on motivation in academic and health–related domains in which either additive or subtractive behaviors can be beneficial. The present studies suggest that, in such domains, individuals may be more likely to use positive than negative models to harness their motivation, even when considering subtractive behaviors.

Nevertheless, it is possible that in cases where programs are targeted at reducing a specific behavior, negative models may prove to be especially effective. For example, campaigns designed to reduce drinking and driving are primarily concerned with a subtractive behavior: They are set up to motivate individuals to stop driving after they have been drinking alcohol. To elicit this motivation, the program may benefit most from the use of a negative role model, such as someone who has been involved in a serious accident as a result of driving while drunk; this negative model may be effective in motivating other individuals to avoid a similar outcome by cutting back on their alcohol consumption when they are planning to drive. It may also be possible to reduce drinking and driving by emphasizing additive behaviors, such as choosing a designated driver; to elicit
this kind of behavior, the program could be set up to illustrate the benefits of this behavior by showing a positive model who has arrived home safely after using this strategy. In general, however, when the primary purpose of the program is to motivate a subtractive behavior, a negative model may be most effective.

This research also has specific implications for programs seeking to alter health–related behaviors. The literature on health–related communications has found that different kinds of activities can be elicited through gain– and loss–framed messages (for reviews, see Detweiler, Bedell, Salovey, Pronin, & Rothman, 1999; Rothman, Martino, Bedell, Detweiler, & Salovey, 1999; Rothman & Salovey, 1997). Gain–framed messages, which emphasize the rewards associated with a particular behavior, appear to be more effective in promoting behaviors that will ensure continued good health; loss–framed messages, which emphasize the costs associated with a particular behavior, appear to be more effective in motivating behaviors that will lead to the detection of health–related problems (Rothman & Salovey, 1997). Positive role models serve as a form of gain–framed message; they exemplify the benefits of good health. As such, they may elicit additive, health–affirming behaviors, such as increasing one’s use of sunscreen in order to maintain healthy skin (e.g., Detweiler et al., 1999) or using a dental rinse to enhance one’s dental health (e.g., Rothman et al., 1999). Negative role models, in contrast, serve as a form of loss–framed message; they exemplify the costs of not performing a particular behavior. As such, they may increase individuals’ motivation to engage in illness–screening behaviors, such as obtaining a mammogram (Banks et al., 1995) or using a dental rinse to detect plaque accumulation (Rothman et al, 1999). The present research suggests that a negative role model may not only increase screening behaviors, but may also elicit subtractive behaviors, such as decreasing one’s time spent in the full midday sun in order to avoid skin cancer, or reducing one’s candy consumption to avoid dental problems. Thus, both positive and negative role models may elicit health–related behavior changes, but the form of the behavior change may depend on whether the model represents a potential health gain or loss.

In this research, we did not examine the actual impact of role models on motivation; rather, we chose to focus on the kinds of models that individuals would select as a means of harnessing their motiva-
tion to perform particular kinds of behaviors. Previous research suggests that individuals do indeed adopt positive and negative models in their daily lives, as a means of boosting or maintaining their motivation in domains as diverse as academic success, athletic or artistic pursuits, and interpersonal interactions (Lockwood et al., 2002). These models may play an ongoing role in individuals’ lives as they work to achieve their goals. The present studies suggest that both the nature of the desired behavior change as well as individuals’ regulatory focus will influence how such models are selected. We note, however, that it is certainly possible that role models will not always prompt the kinds of behavior changes that individuals intend when they select these models. Indeed, although behavioral intentions do predict behavior (e.g., Ajzen, 1991; 1996; Ajzen & Madden, 1986), this relationship is imperfect at best. In future research, it will therefore be important to examine how the adoption of role models influences individuals’ additive and subtractive behavior changes over the long term.

REFERENCES


