Published in final edited form as:

J Exp Soc Psychol. 2008 May ; 44(3): 826–832. doi:10.1016/j.jesp.2007.07.013.

A Field Experiment Testing the Utility of Regulatory Fit Messages for Promoting Physical Activity

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Abstract

Guided by regulatory focus theory, we examined whether messages tailored to individuals' promotion- or prevention-goal orientation (regulatory focus) elicit positive thoughts and feelings about physical activity and increase participation in physical activity. Inactive participants ($N = 206$) were assigned randomly to receive either promotion-focused or prevention-focused messages encouraging physical activity. Two weeks after message exposure, we assessed participants' thoughts and feelings about physical activity and physical activity behavior. Tailored messages that fit individuals' regulatory focus led to greater physical activity participation and more positive feelings than non-fit messages, particularly in the promotion-focused condition. Furthermore, positive retrospective feelings about physical activity mediated the effects of the tailored messages on behavior. These findings provide support for regulatory focus theory and direction for enhancing the effectiveness of messages encouraging physical activity and other health behaviors.

Keywords

physical activity; regulatory focus; message tailoring; persuasion; cancer information service

Regulatory focus theory predicts that goal orientation, or regulatory focus, guides decision making and behavior (Higgins, 2000). Individuals can be classified by their regulatory focus as promotion-oriented ("promoters") or prevention-oriented ("preventers"). Promoters are motivated by advancement and accomplishment – they are motivated to use means of goal pursuit that ensure the presence of positive outcomes (e.g., they eat fruits and vegetables to achieve optimal health; Spiegel, Grant-Pillow, & Higgins, 2004). Preventers are motivated by security needs – they are motivated to use means of goal pursuit that ensure the absence of negative outcomes (e.g., they eat fruits and vegetables to avoid illness). According to the theory,

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individuals experience regulatory fit when they use means of goal pursuit that match their regulatory focus (Higgins, 1997). Regulatory fit makes people “feel right” about what they are doing and strengthens engagement in goal-directed behaviors (Higgins, 2000).

Tailoring messages to individuals’ regulatory focus is one method of creating regulatory fit and subsequently encouraging behavior change (Spiegel et al., 2004). Among promoters, messages emphasizing the benefits achieved with compliance (e.g., “*Being physically active may improve your health*”) induce the use of goal means to ensure positive outcomes and, theoretically, produce regulatory fit that leads to engagement in the target behavior. Likewise, among preventers, messages emphasizing the costs associated with noncompliance (e.g., “*Inactivity may lead to poor health*”) induce the use of goal means to avoid negative outcomes and, accordingly, produce regulatory fit that should lead to behavior change. Indeed, this method has demonstrated effectiveness in changing health-related behaviors, such as increasing fruit and vegetable intake (Latimer et al., 2007; Latimer, Katulak, Mowad, & Salovey, 2005; Spiegel et al., 2004) and dental flossing (Mann, Sherman, & Updegraff, 2004; Updegraff, Sherman, Luyster, & Mann, 2007). For example, Spiegel et al. reported that individuals who received messages encouraging fruit and vegetable intake tailored to their regulatory focus (i.e., regulatory fit messages) showed a 21% greater increase in fruit and vegetable intake at a 1-week follow-up compared to participants who received a non-fit message (e.g., promoters who received a prevention-oriented message).

According to Higgins (2005), the mechanism by which regulatory fit affects behavior is through an increase in people’s perceptions of the value of what they are doing. Whereas most theories of behavior change emphasize perceptions of outcomes (e.g., the benefits of engaging in a behavior) as mediators of behavior change, regulatory focus theory suggests that when people experience regulatory fit, the value they derive from their actions motivates behavior. In the current investigation we examine value derived from fit a mediator of behavior change.

Higgins postulates that this value derived from fit manifests in five ways: (a) increased preference for or *inclination* toward the behavior (Higgins, Roney, Crowe, & Hymes, 1994), (b) increased *motivation* to engage in behavior (Cesario, Grant, & Higgins, 2004; Shah, Higgins, & Friedman, 1998), (c) imagining feeling good about engaging in the behavior (i.e., *positive prospective feelings*; Higgins, 2000), (d) feeling good after engaging in the behavior (i.e., *positive retrospective feelings*; Freitas & Higgins, 2002), and (e) assigning a greater *value* to the behavior (e.g., perceiving the behaviors as more enjoyable, more worthwhile, or worth more money; Higgins, Idson, Freitas, Spiegel, & Molden, 2003). Evidence from laboratory-based studies, as noted, indicates that regulatory fit positively affects each of these value-related domains. Thus, the current investigation uses variables representing each of the five value form fit domains as indirect indicators of regulatory fit.

The experiment described here extends these findings from laboratory-based studies to a field-based investigation in the health domain. Specifically, we examined the effectiveness of regulatory fit messages for increasing physical activity among inactive individuals. We tested two primary hypotheses: (a) when given a promotion-focused message, promoters engage in greater physical activity and exhibit more positive thoughts and feelings about physical activity (inclination, motivation, prospective feelings, retrospective feelings, and perceived value) than preventers, and (b) when given a prevention-focused message, preventers are more active and have more positive thoughts and feelings about physical activity than promoters. In accordance with regulatory focus theory, we further hypothesized that the value participants derive from fit, as indicated by indirect value indicators (i.e., inclination, motivation, prospective feelings, retrospective feelings, and perceived value) mediate the relationship between the regulatory fit messages and behavior.

Method

Participants

Two hundred and six participants (183 women, 23 men) were recruited from the National Cancer Institute's (NCI) Cancer Information Service (CIS). The CIS is the NCI's link to the American public (i.e., cancer survivors and their family and friends), interpreting and explaining research findings in a clear understandable manner, and providing personalized responses to specific questions about cancer (Squiers & Treiman, 2005). Participants accessed the CIS by calling a toll-free number (1-800-4-CANCER). All participants were sedentary (i.e., ≤ 2 bouts of moderate to vigorous intensity physical activity per week; Rodgers & Gauvin, 1998) and between 18 and 69 years of age. Self-reported exclusion criteria included: (a) being a cancer survivor, (b) awaiting test results about a possible cancer diagnosis, (c) calling the CIS for physical activity information, (d) already participating in the study, (e) exhibiting significant distress during the CIS service call, (f) being a non-English speaker or international caller, and (g) having a physical impairment or doctor's recommendation contraindicating unsupervised physical activity participation.

Measures

Regulatory focus was assessed using the 11-item Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001). Participants rated their subjective histories of promotion and prevention success on a 5-point scale (1 = never; 5 = very often). Promotion and prevention scores were computed by averaging responses across the 6 promotion items ($\alpha = .73$) and the 5 prevention items ($\alpha = .80$). The two subscales have adequate test-retest reliability and show appropriate convergent and discriminant validity (Higgins et al., 2001). Following Higgins et al. (2001), predominant regulatory focus was calculated as the difference between the promotion scale and the prevention scale.

Physical activity was assessed using the International Physical Activity Questionnaire (IPAQ) telephone-administered short form (Craig et al., 2003). Participants reported the frequency and duration of walking and moderate- and vigorous-intensity physical activity over the previous 7 days. An estimate of total weekly physical activity was calculated by weighting the reported minutes per week within each activity category by category-specific energy expenditure values (i.e., METs). The IPAQ short form has acceptable measurement properties for monitoring physical activity via telephone interview (Craig et al., 2003).

The *value derived from fit* variables were assessed using separate indicators. To assess *inclination* toward the physical activity messages, participants rated the extent to which they found the physical activity message believable, informative, and interesting using a 1 (not at all) to 5 (extremely) scale, $\alpha = .65$ (Brug, Steenhuis, Van Assema, & De Vries, 1996).

Motivation was measured using two-items in the form, "I will try (I intend) to participate in regular physical activity (i.e., moderate and vigorous activities performed at least three times per week for a total of at least 20 minutes per day) over the next two weeks," using a 1 (strongly disagree) to 5 (strongly agree) scale, $r(114) = .77, p < .01$ (Armitage, 2004). *Prospective feelings* associated with engaging in regular physical activity over the upcoming two weeks were assessed using three bipolar adjective pairs rated on a 5-point scale (unpleasant-pleasant, not enjoyable-enjoyable, stressful-relaxing), $\alpha = .82$ (Rhodes & Courneya, 2003). To assess *retrospective feelings* associated with engaging in physical activity, participants reported their satisfaction with their progress toward increasing physical activity and the results they have experienced due to increased physical activity on a scale from 1 (not satisfied) to 5 (extremely satisfied), $r(108) = .77, p < .01$ (Finch et al., 2005). To assess *perceived goal value*, participants rated the value of engaging in regular physical activity over the next two weeks on a scale from 1 (extremely worthless) to 5 (extremely valuable; Ajzen, 2002).

Procedure

At baseline, following their CIS service call, consenting callers completed a screening interview (including the IPAQ). The interview was conducted by a CIS information specialist as part of a larger physical activity intervention. Eligible participants listened to a randomly assigned promotion- or prevention-focused message encouraging participation in regular physical activity. Quality assurance checklists were completed weekly by CIS supervisors to ensure adherence to the recruitment protocol. No serious deviations from the protocol were noted. Within a day of being recruited, research staff mailed a physical activity guide tailored to the experimental condition. Two weeks later, participants completed a follow-up telephone interview, conducted by research staff, assessing regulatory focus (RFQ), physical activity, and the value derived from fit variables.

The RFQ was administered at the two-week follow-up due to time restrictions placed on the screening and baseline interview by the CIS (i.e., the screening and baseline interview had to be completed in 7–10 minutes). Although regulatory focus is a stable dispositional characteristic, a prevention- or promotion-focused mindset can be temporarily induced by features of the situation (Higgins, 1998). We felt confident that responses to the RFQ would not be affected by the manipulation (promotion- vs. prevention-focused message), as theory and empirical evidence suggest that the RFQ is a measure of individuals' dispositional regulatory focus (Higgins, 2000; Higgins et al., 2001). Specifically, the questionnaire items assess individuals' subjective histories (e.g., "How often did you obey rules and regulations that were established by your parents?"), which should be resistant to manipulation and short-term change. To provide further evidence that this is the case, we also conducted a pilot investigation to verify that responses to the RFQ would not be susceptible to a regulatory focus message manipulation. In the pilot study, 70 students in an introductory psychology course (74% women; $M_{\text{age}} = 18.33$, $SD = 0.86$ years) completed the RFQ, then one week later completed a validated regulatory focus induction task (Freitas et al., 2002; Vaughn et al., 2006). After the regulatory focus induction task, participants immediately completed another RFQ. A 2 (induction condition: prevention/promotion) $\times$ 2 (time: pre/post) mixed model ANOVA indicated that the RFQ scores were unaffected by the induction task, $ps > .05$, suggesting that the RFQ measures a stable characteristic.

Message Development

The core information provided in the telephone-delivered baseline message and physical activity guide (i.e., physical activity recommendations, strategies to overcome physical activity barriers, and health benefits of being active) was adapted from the Centers for Disease Control web site (www.cdc.gov/nccdphp/dnpa/) and Canada's Physical Activity Guide (Health Canada, 2004). This information was consistent across conditions, which differed only in regulatory focus orientation. To induce the use of goal means that ensure positive outcomes, the promotion-focused message emphasized the potential benefits associated with being active (e.g., "Scientists say to accumulate physical activity throughout the day to stay healthy or improve your health;" Higgins, 1997, 2000). To induce the use of goal means that avoid negative outcomes, the prevention-focused message emphasized the potential costs associated with being physically inactive (e.g., "Scientists say failing to accumulate enough physical activity throughout the day can lead to poor health").

In a pilot test of these messages, 21 adults (76% women; $M_{\text{age}} = 27.86$, $SD = 16.65$ years) were assigned randomly to review the prevention- or promotion-focused information. As expected, the promotion-focused messages were evaluated as having a more positive tone and greater emphasis on the benefits of physical activity versus the costs of inactivity than the prevention-focused messages, $ps < .08$. In the actual experiment, a manipulation check evaluating message tone and focus, conducted immediately after the delivery of the baseline message and at Week

2, corroborated the pilot test findings, MANOVA $F(3, 107) = 8.49, p < .001$, Pillai's Trace = .19.

Results

Participant Characteristics

Most participants were white (66.5%) and had completed at least some college (72.4%). The average age of the sample was 47.29 years ($SD = 12.01$). Analyses of variance for continuous data and chi square analyses for categorical data revealed that randomization was successful. There were no differences in demographic characteristics, baseline physical activity, or regulatory focus between the promotion- or prevention-focused experimental conditions.

Of the 206 participants initially randomized ($n_{\text{promotion}} = 100$), 118 (57%) completed the intervention and follow-up interview. This completion rate is higher than reported in previous CIS-based studies (Latimer et al., 2005). Participants who dropped out (i.e., could not be reached for follow-up after fifteen call attempts over a four-week period) or withdrew from the experiment reported greater total physical activity at baseline and were more likely from a non-white ethnic group $ps < .05$. They did not differ from participants who completed the trial on any other demographic characteristic. There was no differential drop-out by experimental condition.

Effects of Regulatory Fit Messages

Separate hierarchical regression analyses were conducted to test the hypotheses regarding the effects of regulatory fit messages on physical activity behavior and the value derived from fit variables. In each regression model, experimental condition, regulatory focus, and the interaction term (Experimental Condition $\times$ Regulatory Focus) were entered separately. Prior to conducting these analyses, regulatory focus was zero-centered (Cohen, Cohen, West, & Aiken, 2003), and experimental condition was dummy-coded (prevention message = 0, promotion message = 1). To interpret the Experimental Condition $\times$ Regulatory Focus interaction, we calculated two restructured regression equations (one for each experimental condition) and examined the relationship between regulatory focus and the outcome variable at two different levels of regulatory focus; 1 SD below the mean regulatory focus score (i.e., preventers) and 1 SD above the mean regulatory focus score (i.e., promoters; Cohen et al., 2003).

Behavior—The overall hierarchical regression model predicting Week 2 total activity, controlling for baseline activity, was significant, $R^2_{\text{adjusted}} = .07, F(4, 98) = 2.90, p < .05$. Baseline activity ($R^2_{\text{change}} = .05, \beta = .25, p < .05$), and the Experimental Condition $\times$ Regulatory Focus interaction, ($R^2_{\text{change}} = .04, \beta = .28, p < .05$), emerged as unique predictors of behavior. The interaction is depicted in Figure 1. As predicted, in the promotion-focused message condition activity level was related positively to regulatory focus suggesting that the effectiveness of a promotion-focused message increased as regulatory focus became predominantly promotion-oriented, ($R^2_{\text{change}} = .08, \beta = .29, p = .05$). For the prevention-focused message, the relationship between regulatory focus and total activity was in the predicted negative direction but was not statistically significant ($R^2_{\text{change}} = .01, \beta = -.11$).

Value derived from fit variables—Separate regression models were conducted to examine the effects of regulatory fit messages on each value derived from fit variable (inclination, motivation, positive prospective feelings, positive retrospective feelings, and perceived value). The hierarchical regression models were significant overall for inclination toward the messages ($R^2_{\text{adjusted}} = .05, F(3, 103) = 2.96, p < .05$), positive prospective feelings ($R^2_{\text{adjusted}} = .12, F(3, 109) = 5.96, p < .01$), and positive retrospective feelings ($R^2_{\text{adjusted}} = .12, F(3, 102) = 5.97$,

$p < .01$). Regarding inclination toward the messages, a main effect for experimental condition emerged ($\beta = .22, p < .05$); participants reported the promotion-focused messages were more believable, informative, and interesting. The Experimental Condition $\times$ Regulatory Focus interaction approached statistical significance ($R^2_{\text{change}} = .03, \beta = .27, p = .06$). The regression coefficients indicated that the messages worked in the predicted direction: In the promotion-focused message condition, inclination toward the messages tended to increase as regulatory focus became predominantly promotion-focused ($\beta = .17$). In prevention-focused message condition, inclination tended to increase as regulatory focus became predominantly prevention-focused ($\beta = -.20$).

Regarding prospective feelings, there was a significant Experimental Condition $\times$ Regulatory Focus interaction, ($R^2_{\text{change}} = .05, \beta = .35, p < .01$). As predicted, in the promotion-focused message condition, prospective feelings about the choice to engage in physical activity in the next two weeks correlated positively with regulatory focus, that is, prospective feelings about physical activity were more positive among predominantly promotion-oriented participants ($\beta = .47, p < .01$). In the prevention-focused message condition, prospective feelings were not related to regulatory focus ($\beta = .00$).

Regarding retrospective positive feelings, there was a main effect for experimental condition ($\beta = .19, p < .05$). Participants in the promotion-focused message condition reported greater satisfaction with physical activity outcomes ($\beta = .22, p < .02$). The Experimental Condition $\times$ Regulatory Focus interaction was also significant ($R^2_{\text{change}} = .09, \beta = .45, p < .01$). As predicted, there was a positive relationship between retrospective feelings and regulatory focus in the promotion-focused message condition ($\beta = .38, p < .01$). Retrospective feelings about physical activity were more positive among predominantly promotion-oriented participants. Although the regression coefficient did not reach conventional levels of statistical significance, the regression equation for the prevention-focused message condition revealed a negative relationship between retrospective feelings and regulatory focus ($\beta = -.23$). As predicted, in the prevention-focused message condition, retrospective feelings tended to be more positive among predominantly prevention-oriented participants.

Mediation Analyses

To examine whether the regulatory fit variables mediated the effects of regulatory fit messages on behavior, we used Baron and Kenny's (1986) four-step procedure. First we demonstrated a significant relationship between the predictor (Experimental Condition $\times$ Regulatory Focus) and the outcome variable (total physical activity), as described in the previous section. Second, we established the relationship between the predictor and two of the hypothesized mediators (value derived from fit variables), namely prospective and retrospective feelings (inclination, motivation, and perceived value were not statistically significant). Third, to show that each mediator was related to the outcome, total activity was regressed separately on prospective and retrospective feelings controlling for baseline activity. Although both models were significant ($ps < .05$), only retrospective feelings emerged as a significant unique predictor of behavior ($R^2_{\text{change}} = .04, \beta = .19, p = .05$). Thus, in the final step to test mediation (i.e., demonstrating that the strength of the relationship between the predictor and the outcome is reduced when controlling for the mediator), we examined retrospective feelings as a mediator by regressing total physical activity on to experimental condition, regulatory focus, and the interaction term after controlling for both baseline activity and retrospective feelings. The model was significant, $R^2_{\text{adjusted}} = .07, F(5, 89) = 2.38, p < .05$, but the interaction was no longer significant ($R^2_{\text{change}} = .02, \beta = .01, p > .05$), indicating that retrospective feelings did indeed mediate the effects of messages tailored to regulatory focus on behavior.

Discussion

When given promotion-focused messages, promoters engaged in greater physical activity than preventers. These findings are consistent with accumulating evidence that tailoring messages to dispositional characteristics of the message recipient enhances message persuasiveness (Cesario et al., 2004) and leads to behavior change (Latimer et al., 2005, 2007; Mann et al., 2004; Orbell, Perugini, & Rakow, 2004; Updegraff et al., 2007).

Furthermore, this study suggests that providing promoters with tailored messages creates regulatory fit; their retrospective and prospective feelings about the behavior became increasingly positive, and their inclinations, or preferences, toward the message increased somewhat. The pattern of results for the fit indices is similar to those reported by Updegraff and colleagues (2007). They found that participants who received strong messages encouraging daily dental flossing that were matched to their motivation orientation (a dispositional characteristic similar to regulatory focus), evaluated the messages more positively and had more positive prospective feelings about engaging in the behavior than participants who received mismatched messages. These consistent findings suggest that messages tailored to goal orientation influence behavior by changing the value people prescribe to the behavior; in particular they have more positive feelings towards the behavior (either anticipating engaging in the behavior or reflecting on the recent experience of engaging in the behavior).

In the present study, mediational analyses revealed that one way regulatory fit messages increased physical activity for promoters was through positive retrospective feelings about engaging in the behavior. Research suggests that individuals' construal of past goals becomes increasingly promotion-focused over time (Pennington & Roese, 2003). Perhaps, in the current experiment when participants were asked to evaluate their satisfaction with their past behavior, they construed the goal of increasing their physical activity level as being promotion-oriented. For promoters who received promotion messages, having a construal of past goals consistent with their regulatory focus and the message they received might have led to a strong sense of regulatory fit (which manifested as positive evaluations of past accomplishments). As a consequence of strengthened fit resulting from reflections on the past, it was the retrospective feelings indices of value derived from fit that emerged as a critical mediator of the tailoring effects. Future research should aim to elicit particularly strong regulatory fit experiences to maximize the impact on value derived from fit indices and ultimately behavior. In summary, these findings indicate the importance of providing promoters with regulatory fit messages in order to optimize the effectiveness of a brief health behavior change intervention.

Although trends were in the predicted direction, prevention-focused messages did not elicit significantly greater behavioral enactment among preventers nor did they influence the value derived from fit variables. Failure to affect these variables does not imply necessarily that the benefits of regulatory fit prevention messages be discounted, but rather that the messages used in this study may not have created a strong feeling of fit for preventers. Indeed, to create fit, regulatory focus theory suggests that prevention messages should be framed in terms of costs. Consistent with research demonstrating the effectiveness of regulatory fit messages for encouraging health-related behaviors (Mann et al., 2004; Spiegel et al., 2004) and standard health communication methods for creating cost-framed messages (cf., Rothman & Salovey, 1997), the prevention-focused messages used in the present experiment emphasized the potential costs that result from failing to engage in the target behavior (e.g., inactivity increases the risk of cancer). An alternative approach for prevention-focused messages would have been to highlight the costs avoided from *activity* (e.g., physical activity reduces your risk of cancer; Higgins, 2000). Indeed, laboratory experiments that have tailored prevention-focused messages in this way have shown significant effects on behavior (Idson, Liberman, & Higgins, 2000; Shah et al., 1998). Applying this alternate approach also would strengthen the design of

the current experiment. The prevention message used in this experiment described the outcomes resulting from *not engaging* in activity (i.e., the consequences of inactivity) whereas the promotion message described the outcomes resulting from *engaging* in activity (i.e., the benefits of activity). Applying the alternate approach for development of prevention messages would have resulted in messages with an equivalent focus (i.e., the outcomes resulting from *engaging* in activity – consequences avoided from activity) and thus a design absent of confounds.

The discrepancy between the standard method for creating cost-framed messages (Rothman & Salovey, 1997) and the alternate approach (Idson et al., 2000; Spiegel et al., 2004) may have limited message effectiveness in the current investigation. However the integration of regulatory focus theory into the standard method has utility and may explain null findings in research from the physical activity and health communication domain. For example, two investigations comparing the effectiveness of messages emphasizing benefits of physical activity versus costs of inactivity reported null findings at the 2-week follow-up (Jones, Sinclair, & Courneya, 2003; Jones, Sinclair, Rhodes, & Courneya, 2004). Results from the current study suggest that any message effect, and in particular the messages emphasizing benefits (i.e., promotion-focused messages), may have been suppressed as a result of individual differences in regulatory focus. More specifically, preventers may have been less apt to respond to messages emphasizing benefits and promoters may have been less responsive to messages emphasizing costs, thus suppressing the effects of either message on behavior. Future research in this area is needed to explore the promise of this integrated framework.

We did not find empirical evidence that regulatory fit affects motivation and perceived value. Consistent with numerous health behavior change theories (e.g., theory of planned behavior; Ajzen, 1991), we operationalized motivation as intention to engage in physical activity. In other investigations testing regulatory focus theory, motivation is defined through a more indirect indicator – goal enactment (e.g., number of servings of fruits and vegetables; see Higgins, 2000). Defined this way, our findings do support this value derived from fit variable (i.e., motivation) given that promotion-focused messages lead to greater physical activity among promoters than preventers. Our conceptualization of value (i.e., the perceived value/worthlessness of engaging in physical activity) also was based on health behavior change theory and was somewhat dissimilar to operationalizations within regulatory focus research. Whereas other investigators of regulatory focus theory typically ask participants to assign a monetary value to an object or a decision, participants in the current study reported whether engaging in physical activity in the next two weeks would be worthless or valuable. Perhaps a measure requiring participants to assign monetary value to a fitness club membership or a piece of exercise equipment would be a more suitable approach.

Generalization from these findings is limited by the homogeneity of the study sample and the brief duration of the intervention. The majority of participants were relatively well educated, non-Hispanic white, female callers to the CIS; consequently, the findings may not generalize to other demographic groups. Further, the follow-up period was short, suggesting that increased physical activity among promoters receiving regulatory fit messages may not extend beyond two weeks.

Despite these design limitations, this study is theoretically important given that it is the first study to test value derived from fit as mediators of tailoring to regulatory fit in a field setting. The study replicates the core finding from health communication research that tailored messages are more effective than nontailored messages for encouraging health behavior change, particularly among promoters. Additionally, the results extend our understanding of the mechanisms underlying the efficacy of messages tailored to individuals' regulatory focus for eliciting health behavior change. In particular, positive retrospective feelings associated

with a behavior appear to be instrumental in behavior change, highlighting the importance of positive emotions in physical health (e.g., Salovey, Rothman, Detweiler, & Steward, 2000). From a practical perspective, these findings provide direction for enhancing the effectiveness of physical activity messages. When providing physical activity counseling, health practitioners should be encouraged to consider clients' regulatory focus (i.e., conducting a brief assessment using the regulatory focus questionnaire) and provide concordant information. This approach may be particularly relevant for promotion-oriented individuals.

Acknowledgments

Research reported in this article was funded through a grant from the National Cancer Institute (R01-CA68427) awarded to Peter Salovey. Althea Hicks and Julie Keany Hodorowki are funded by a National Cancer Institute Contract (HHSN261200511001C, ADB No. N02-CO-51101). Amy Latimer was supported by a Postdoctoral Fellowship from the Social Sciences and Humanities Research Council of Canada.

The research was conducted as a partnership between the National Cancer Institute's Cancer Information Service (CIS) Research Program and Yale University. Staff from the CIS were involved in developing, implementing, and monitoring administration of the screening survey. The intervention materials developed and modified in collaboration with the CIS. Sincere thanks to the CIS New York Office for attending study-related training seminars and for their help in data collection.

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Figure 1.

The Experimental Condition $\times$ Regulatory Focus interaction predicting total physical activity at the two week follow-up controlling for baseline physical activity. The lines were plotted using unstandardized beta weights (promotion $b = 74.73$; prevention $b = -24.84$)