According to regulatory fit theory (Higgins, 2000), people experience regulatory fit when they pursue goals that align with their regulatory orientations. Better regulatory fit has behavioral benefits, including greater performance, greater persistence, and greater task enjoyment. Greater fit between the regulatory orientations of interaction partners (interpersonal regulatory fit; Righetti, Finkenauer, & Rusbult, 2011) carries similar benefits. The current work sought to extend interpersonal regulatory fit from dyadic fit to fit with groups, focusing on group properties that may augment the benefits of regulatory fit. Specifically, an experiment was conducted to examine the potential moderating role of entitativity for group regulatory fit outcomes. It was expected that greater fit between participants’ regulatory focus and the focus displayed by an ingroup would be positively related with enjoyment of, motivation for, and performance on a relevant task. Further, it was expected that the magnitude of these effects would be moderated by group entitativity such that greater group entitativity would produce stronger fit effects. Contrary to these hypotheses, regulatory fit effects were not observed. Limitations of the current work and potential future directions for research are discussed.
THE CONSEQUENCES OFENTITATIVITY FOR
GROUP LEVEL REGULATORY FIT

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The Consequences of Entitativity for Group-Level Regulatory Fit

In the course of everyday life, individuals may pursue goals in a variety of social contexts. According to regulatory focus theory (Higgins, 1997), these goals can be pursued using two different regulatory styles, called promotion focus and prevention focus. Promotion focus is rooted in nurturance needs and serves one’s ideals, seeking to fulfill one’s hopes, wishes, and aspirations. Promotion-focused strategies tend to use approach as a means of goal pursuit, eagerly pursuing gains even at the cost of some risk. In contrast, prevention focus is rooted in security needs and serves one’s duties, obligations, and responsibilities. Prevention-focused strategies tend to use avoidance as a means of goal pursuit, vigilantly avoiding losses in order to ensure safety and security.

Several studies indicate the influence of regulatory focus on goal attainment strategies. For example, Higgins, Roney, Crowe, and Hymes (1994) manipulated participants’ regulatory focus by asking them to write about their hopes and goals (promotion condition) or their duties and obligations (prevention condition). Participants then read vignettes in which target individuals pursued their goals using different strategies. Some targets approached a match to their goal state (e.g., “Because I wanted to be at school for the beginning of my 8:30 psychology class . . . I woke up early this morning”), whereas other targets avoided a mismatch to their goal state (e.g., “I wanted to take a class in photography . . . so I didn’t register for a class in Spanish that was scheduled at the same time”). Consistent with regulatory focus theory, participants in the promotion condition better recalled vignettes in which approach of a match was the strategic means, whereas participants in the prevention condition better recalled vignettes in which avoidance of a mismatch was the strategic means.

In another study, participants’ chronic regulatory focus predicted the types of strategies they used in the service of friendship goals (Higgins et al., 1994). Specifically, participants first completed the Selves Questionnaire (Higgins, Bond, Klein, & Strauman, 1986), which assesses the strength of promotion and prevention concerns by comparing one’s ideal self and one’s ought self, respectively, to one’s actual self. Participants who were greater in actual-ideal discrepancies and lower in actual-ought discrepancies were classified as predominant ideal discrepants (i.e., promotion focused), whereas participants who were greater in actual-ought discrepancies and lower in actual-ideal discrepancy were classified as predominant ought discrepants (i.e., prevention focused). Friendship strategies that approached matches to desired goal states (e.g., “be supportive of your friends”) were endorsed more by promotion-focused participants than by prevention-focused participants, whereas friendship strategies that avoided mismatches to desired goal states (e.g., “don’t lose contact with friends”) were endorsed more by prevention-focused participants than by promotion-focused participants.

Importantly, regulatory focus also affects people’s behavior. For example, individuals who are promotion focused tend to complete tasks in ways that maximize opportunity, whereas people who are prevention focused tend to complete tasks in ways that minimize the chances of making mistakes. In one study, for example, participants completed two sorting tasks, one sorting fruits and one sorting vegetables (Crowe & Higgins, 1997). This sorting task was framed to induce promotion focus or prevention focus. In the promotion focus conditions, participants were told that their participation in a subsequent liked task was contingent on their performance on the sorting task. In the prevention focus conditions, participants were told that their participation in a subsequent disliked task was contingent on their performance on the sorting task. Thus, participants were focused either on gains and nongains or on nonloss and loss, respectively. The researchers hypothesized that promotion-focused participants, seeking to seize
opportunities, would be likely to use different criteria between the two sorting tasks (e.g., sort fruits by shape and vegetables by color). In contrast, prevention-focused participants were expected to use the same criterion across both tasks in order to reduce the likelihood of making an error in the second sorting task. Indeed, participants in the prevention focus conditions were more likely to use the same criterion across both sorting tasks, whereas participants in the promotion focus conditions were more likely to use different criteria between the two tasks. Additionally, prevention focus condition participants were more likely than promotion focus participants to use dichotomous criteria (e.g., green versus not green vegetables), which further reduce the likelihood of committing an error (Crowe & Higgins, 1997).

In addition to the effects described above, regulatory focus can also affect the experiences and outcomes of goal pursuit through regulatory fit. According to regulatory fit theory (Higgins, 2000), people experience regulatory fit when they pursue goals that align with their regulatory orientations. Thus, individuals who are promotion focused experience fit when they pursue goals in an eager, gain-maximizing fashion, whereas individuals who are prevention focused experience fit when they pursue goals in a vigilant, loss-avoiding fashion. This sense of fit, in turn, provides motivational benefits. For example, greater fit increases enjoyment of, perceived success at, and willingness to repeat a task (Freitas & Higgins, 2002). Additionally, greater fit results in stronger task persistence ( Förster, Higgins, & Idson, 1998). Importantly, these motivational benefits translate into greater goal success. For example, participants who were asked to generate anagrams from strings of letters produced more anagrams when the task was framed to match their regulatory orientations (Shah, Higgins, & Friedman, 1998). In the promotion-framing condition, participants were told that they would be paid $4 for their participation, but that they could earn an extra $1 if they identified 90% of all possible anagrams, which emphasized gain and nongain. In the prevention-framing condition, participants were instead told that they would be paid $5 for participating, but that they could lose $1 if they missed more than 10% of possible anagrams, which emphasized nonloss and loss. Consistent with regulatory focus theory, participants’ promotion focus positively predicted performance in the promotion-framing condition but not in the prevention-framing condition. Conversely, participants’ prevention focus positively predicted performance in the prevention-framing condition but not in the promotion-framing condition.

In a different study, participants who were asked to write a report in their free time were more successful in attaining this goal when the strategies they were induced to employ matched their chronic regulatory focus (Spiegel, Grant-Pillow, & Higgins, 2004). Before writing their reports, participants were asked to imagine implementation steps consisting of when, where, and how they would write. Participants in the eagerness means (promotion) condition were asked to imagine convenient times and comfortable places to write their reports and were asked to imagine capturing as many details as possible and making their reports as vivid and interesting as possible. Participants in the vigilance means (prevention) condition were asked to imagine inconvenient times and uncomfortable places to avoid when writing their reports and were asked to imagine not leaving any details out and not making their reports bland or boring. Participants who experienced regulatory fit were 48% more likely to turn in reports than were participants who experienced a lack of fit (Spiegel et al., 2004).

In addition to the conception of regulatory fit as a match between orientation and the means of goal pursuit, other forms of regulatory fit have motivational consequences. One such form of regulatory fit is interpersonal regulatory fit, or the fit between an individual’s regulatory orientation and the regulatory orientation of an interaction partner (Righetti, Finkenauer, &
Rusbult, 2011). Specifically, interaction partners can shape how people view and pursue their goals. When interpersonal regulatory fit occurs, individuals can feel more encouraged or energized to pursue their goals, whereas a lack of interpersonal fit may lead one to lose motivation in pursuing a goal. For example, one study asked married partners to complete a measure of chronic regulatory focus along with a questionnaire assessing various partner qualities. A significant interaction between participant regulatory focus and partner regulatory focus for motivation (“My partner motivates me to accomplish goals and to get things done by means of what he or she says and does”) and enjoyment (“I enjoy receiving suggestions and advice from my partner”) was found, such that participants who were promotion focused were more motivated and better enjoyed receiving suggestions from their partner when their partner was also promotion focused. (Righetti et al., 2011).

Of course, people often interact with multiple others in the course of everyday life rather than with a singular individual, and these interactions often involve social groups. For example, a person may identify certain groups of interaction partners as coworkers, family members, or friends when pursuing goals such as group sales objectives, hosting a family reunion, or planning a dinner party, respectively. Extending the concept of interpersonal regulatory fit from dyadic relationships to relationships between individuals and social groups, one would anticipate that fit between an individual’s regulatory orientation and the regulatory orientation emphasized by members of an ingroup should have similar consequences for motivation and performance.

This by itself is not a particularly novel prediction. Rather, what has been described thus far can be characterized simply as a summation of the effects of many dyadic interactions. However, social groups possess certain psychological properties that individuals do not and serve important functions beyond those served by individuals. For example, groups supply social norms that prescribe individuals’ behavior (Sherif, 1936). Defined simply, social norms are socially shared rules or standards that guide behavior. According to an evolutionary perspective, norms are useful because they can communicate to group members the set of behaviors that contribute to survival (Schaller & Latané, 1996). Put in a more contemporary context, norms are functional because they can communicate which behaviors are useful for achieving group members’ goals.

Yet, not all norms affect behavior equally. Instead, norms differ in their ability to influence behavior. Several factors determine the extent to which a particular norm will guide behavior. For example, norm salience has been found to influence norm strength. In a study of littering behavior (Cialdini, Reno, & Kallgren, 1990), participants were provided with a handbill that they could either litter or keep because no garbage containers were provided. To create a norm of littering or of not littering, the setting was manipulated to be either heavily littered or cleaned of all litter, respectively. Norm salience was manipulated by the presence of a confederate who either littered a handbill in front of the participant (high salience) or simply walked by the participant while holding the handbill (low salience). High salience of the norm produced more normative behavior. That is, compared to low-salience counterparts, participants in the high salience condition littered less in the clean environment and more in the heavily littered environment.

In addition to norm salience, norm type can also influence norm strength. Norms can be descriptive (i.e., what other people normally do) or injunctive (i.e., what people ought to do; Cialdini, Kallgren, & Reno, 1991). In another study examining littering behaviors, a descriptive norm decreased littering only in the environment in which the norm was made salient, whereas injunctive norms reduced littering in a particular environment even when it was made salient in a
different environment (Cialdini et al., 1991). In this study, participants had handbills placed on their vehicles in a parking lot and were randomly assigned in a two (norm salience: descriptive vs. injunctive) by two (environment: same vs. different) between-subjects design. In the descriptive norm condition, participants witnessed a confederate dispose of a carried piece of litter by throwing it into a trash receptacle, thus increasing the salience of the descriptive norm *people don’t litter*. In the injunctive norm condition, participants witnessed a confederate pick up a piece of litter on the ground and continue walking, thus increasing the salience of the injunctive norm *people shouldn’t litter*. These normative behaviors occurred either in the parking lot where participants received the handbill (same environment) or in a grassy area before the parking lot (different environment). When the descriptive antilittering norm was made salient, participants showed reduced littering only when it was made salient in the parking lot. However, when the injunctive antilittering norm was made salient, participants showed reduced littering whether it was made salient in the parking lot or in the grassy area.

With respect to group norms, it is possible that heretofore unexplored factors could also influence norm strength. For example, it is possible that certain properties of a group offering a group norm might affect norm-relevant behavior. In the current work, I explore the possible role of group entitativity in influencing norm strength. Entitativity refers to a group’s coherence as a psychologically meaningful unit (Hamilton & Sherman, 1996). Several factors contribute to increasing the entitativity of groups, such as group members who are greater in similarity, common fate, and group importance (Campbell, 1958; Lickel, Hamilton, Wieczorkowska, Lewis, Sherman, & Uhles, 2000; McConnell, Sherman, & Hamilton, 1997). Group similarity refers to the degree of uniformity among group members in terms of their traits, attitudes, and characteristics. Similarly, common fate refers to the extent to which group members share similar goals and experience the consequences of group successes and failures collectively. In the current work, I consider whether more entitative groups produce more powerful norms that influence an individual’s goal pursuit more strongly.

Why might group entitativity affect norm strength? I argue that group entitativity renders a group more psychologically coherent and meaningful, and thus social messages from more entitative groups should receive greater information processing compared to social messages communicated by less entitative groups. Indeed, a substantial body of research has shown that information associated with more entitative groups is processed more effortfully. For example, McConnell et al. (1997) manipulated group entitativity (i.e., whether a target group was composed of individuals with more or less similar opinions, important beliefs, and behaviors) and found that people processed social information about more entitative groups in a more extensive fashion (e.g., better recall, fewer judgmental biases about the group) than less entitative groups. In other work, more entitative groups were viewed as more persuasive when their arguments are strong, suggesting that greater group entitativity induces more argument elaboration in a persuasive appeal, which is characteristic of greater information processing (Rydell & McConnell, 2005). By extension, I predict that group norms should be perceived as stronger, and thus more influential in directing behavior, when group entitativity is greater.

Returning now to regulatory fit, I contend that the importance of entitativity for group-level regulatory fit extends from past work showing that greater entitativity increases social information processing (McConnell et al., 1997; Rydell & McConnell, 2005). That is, group messages related to goal pursuit can be considered group norms, and these goal-relevant norms should be perceived as stronger when coming from groups that are more entitative. Thus, the
effects of regulatory fit on enjoyment, motivation, and performance should be amplified to the extent that the group offering the goal-relevant norms is more entitative.

To summarize, the current work advances two main hypotheses. First, fit between chronic regulatory focus and the regulatory focus exhibited by an ingroup was expected to increase enjoyment of, motivation for, and performance on a relevant task relative to lack of fit. Second, the magnitude of these effects was expected to be moderated by group entitativity such that stronger effects would emerge with more entitative groups compared to less entitative groups. To test these hypotheses, an experiment was conducted in which participants were exposed to a group whose description suggested either greater entitativity or less entitativity (modeled after McConnell et al., 1997). Group members endorsed behaviors described with either a promotion focus or a prevention focus, and participants completed a task measuring performance, motivation (i.e., task persistence), and task enjoyment.

**Method**

**Participants**

To determine adequate sample size, an a priori power analysis was conducted, producing a minimum $N$ of 235 (G*Power; Faul, Erdfelder, & Buchner, 2007). This analysis assumed a medium effect size consistent with an entitativity effect observed in previous published work (McConnell et al., 1997), with $\alpha = .05$ and a desired power of .80. Auxiliary analyses of the McConnell et al. (1997) data, whose manipulation was used for the current study, revealed a Cohen’s $d$ of .501 (i.e., a medium-sized effect). We approached data collection with the goal of oversampling participants in order to meet the desired sample size once a priori participant exclusions were applied (to be described, below).

Participants were 313 Miami University undergraduates (209 women, 103 men, 1 undisclosed) recruited from introductory psychology classes who received partial course credit for their participation. Participants were 19.09 years old on average ($SD = 1.16$), and they were randomly assigned to a 2 (entitativity: high vs. low) by 2 (regulatory focus: promotion vs. prevention) between-subjects design.

**Materials and Procedure**

**Regulatory focus.** Upon arrival to the lab, participants completed the Composite Regulatory Focus Scale (CRFS; Haws, Dholakia, & Bearden, 2010; Appendix A). This measure consists of 10 items, with 5 items measuring promotion focus and 5 items measuring prevention focus. An example of an item assessing promotion focus is, “I feel like I have made progress toward being successful in my life,” whereas an example of an item measuring prevention focus is, “I usually obeyed the rules and regulations that were established by my parents.” Responses are given on a scale ranging from 1 (Not at all true of me) to 7 (Very true of me). Following past work (e.g., Bohns et al., 2013; Bohns & Higgins, 2011), an index of relative promotion focus was created by subtracting prevention subscale scores from promotion subscale scores, with larger scores reflecting relatively more chronic promotion focus.

**Target group exposure.** Following completion of the CRFS, participants were exposed to the target group. They received the following cover story and instructions for this group exposure task: “In this study, we are interested in college students’ strategies for success in academia. To this end, we reached out to a wide range of student groups on campus and asked their members to tell us about the strategies they use in order to be successful college students. Today, you will be reading responses from one of these groups chosen at random. Later in the study, you will be asked about your perceptions of these strategies. Before you read their responses, you will read some background information about the group.” The plausibility of this
cover story was bolstered by fabricated loading screens that read, “Retrieving group . . .” and “Group J selected. Retrieving group data . . .” before advancing participants to the group description page.

**Group descriptions.** As a manipulation of group entitativity, participants were randomly assigned to read one of two group descriptions, borrowed from McConnell et al. (1997). Participants in the high entitativity condition were told, “The members of Group J are very similar to each other and do not differ in many ways from each other. The members come from similar backgrounds and have the same opinions, similar important beliefs, and similar personalities. Across a variety of situations, members of Group J will act in a similar manner.” Participants in the low entitativity condition were told, “The members of Group J are very diverse and differ in many ways from each other. The members come from different backgrounds and have different opinions, different important beliefs, and different personalities. Across a variety of situations, members of Group J will act in a different manner.”

**Group member success strategies.** Following presentation of the group description, participants were randomly assigned to read one of two sets of group member success strategy responses (Appendix B). In the promotion condition, 5 out of 7 group members’ responses included strategies framed to reflect promotion focus (e.g., “I’m eager to study well in advance of exams so that I get the highest grade possible”), and the two remaining responses included strategies framed to reflect prevention focus (e.g., “I’m careful to study well in advance of exams so that I don’t miss anything important”). In the prevention focus condition, 5 out of 7 group members’ responses will include strategies framed to reflect prevention focus, and the remaining 2 responses will include strategies framed to reflect promotion focus. Importantly, these strategies were pretested to be equivalent in valence and perceived effectiveness.

**Regulatory fit outcomes.** After reading about the group members’ success strategies, participants completed an anagram solving task measuring both performance and persistence (Appendix C). To ensure that any regulatory fit experienced by participants during the previous task was perceived as relevant to this anagram solving task, the following information was included in the task introduction text: “This task is known by researchers to significantly predict college success. Students who perform well on this task tend to be successful in college, whereas those who perform poorly on this task generally go on to have poorer grades and higher dropout rates.”

The anagram task consisted of 12 anagrams in total, presented one at a time. Participants were instructed to proceed to the next anagram if they solved the current one or if they gave up on solving it. Participants were allowed to spend up to 3 minutes on each anagram before automatically being advanced to the next anagram. In order to assess both performance and persistence, the anagram task was divided into two sections. The first 9 anagrams were solvable anagrams, pretested to include 3 anagrams of lesser difficulty, 3 of moderate difficulty, and 3 of greater difficulty. The number of anagrams solved served as a measure of task performance. The final 3 anagrams, unbeknownst to participants, were unsolvable, with time spent attempting to them being a measure of persistence rather than skill. Upon completing this anagram task, participants responded to an item assessing overall anagram task enjoyment using a 7-point scale anchored at 1 (Did not enjoy at all) and 7 (Enjoyed extremely). This measure was similar to measures of enjoyment used in past regulatory focus studies (e.g., Freitas & Higgins, 2002).

**Awareness and suspicion.** The aforementioned experimental paradigm relies on several deceptive elements. Thus, participants must believe that the target group members are real individuals, that the anagram task is predictive of academic success, and that all 12 anagrams are
solvable. To ensure that participants accepted the cover story and remained unaware of the aims of the experiment, participants were probed for awareness and suspicion prior to debriefing. Specifically, participants were asked what they thought the purpose of the study was and whether they thought anything about the study seemed strange or suspicious. Participants who expressed suspicion that target group members were not real \( (n = 1) \), that the anagram task was not predictive of academic success \( (n = 14) \), or that some of the anagrams were unsolvable \( (n = 52) \) were excluded from data analyses. Further, performance on the anagram task relies on a thorough familiarity with the English language. Although English fluency was not assessed directly, citizenship was used as a proxy indicator. Thus, data from 37 participants who were not United States citizens were excluded from analyses. In total, data from 97 participants were excluded (some excluded for multiple reasons), yielding a final sample of 216 participants examined in analyses.

**Demographics.** Finally, participants completed a demographic survey, with items assessing age, year in college (e.g., first year, sophomore), citizenship, and race and ethnicity. Following the completion of these items, participants were fully debriefed and thanked for their participation.

**Results**

**Descriptive Statistics**

Theoretically, relative promotion score can range from -6 (maximum prevention focus) to 6 (maximum promotion focus). In this study, the mean relative promotion score was 0.44 \( (SD = 0.90) \). Of the 9 solvable anagrams, participants correctly solved an average of 6.16 anagrams \( (SD = 1.95) \). Theoretically, time spent attempting unsolvable anagrams could range from 0s to 540s. On average, participants spent 188.17s \( (SD = 126.82) \) attempting these anagrams. Task enjoyment could vary from 1 (Did not enjoy at all) to 7 (Enjoyed extremely), and participants’ mean task enjoyment was 2.94 \( (SD = 1.43) \).

**Scale Reliability**

The CRFS consists of a promotion focus subscale (5 items) and a prevention focus subscale (5 items). Cronbach’s alphas for these subscales were .54 and .39, respectively, indicating poor reliability. These alphas were considerably lower than previously reported alphas, which ranged from .69 to .84 for the promotion subscale and from .67 to .77 for the prevention subscale (Haws et al., 2010).

**Correlations**

Zero-order correlations for all variables of interest can be found in Table 1. All three outcome measures (i.e., objective performance on the nine solvable anagrams, persistence on the three unsolvable anagrams, and overall task enjoyment) significantly and positively correlated with one another, suggesting convergent validity for these measures. One would expect that, overall, participants who were skilled anagram solvers would enjoy the task more and persist longer than would less skilled participants. Interestingly, promotion and prevention subscale scores showed a small but significant positive correlation, which will be discussed later.

**Primary Analyses**

This study used a factorial design with two categorical predictors (success strategy condition and entitativity condition) and one continuous predictor (relative promotion score). For each outcome measure, a two-way interaction between success strategy condition and relative promotion score was expected, which would indicate a regulatory fit effect. Additionally, a three-way interaction among success strategy condition, relative promotion score, and entitativity
condition was expected. This interaction would indicate moderation of regulatory fit effects by group entitativity (i.e., with stronger fit effects for more entitative groups).

As shown in Table 1, the three outcome variables were significantly and positively correlated with one another, which suggests that the outcome measures may be assessing a single underlying construct. To test this, a principle components factor analysis was conducted, which indeed revealed a one-factor solution. The scree plot revealed a strong elbow at the second factor, indicating a single underlying factor. Specifically, the eigenvalues dropped from 1.65 to .85 between the first and second factors, respectively. Thus, a factor score reflecting general task engagement was computed using objective performance, persistence, and overall task enjoyment. Because each of these original outcome measures have been examined individually in past published work (e.g., Förster et al., 1998; Freitas & Higgins, 2002; Shah et al., 1998), separate analyses were conducted for each original outcome measure in addition to composite general task engagement factor score.

Task engagement. The first key prediction was an interaction between relative promotion focus and success strategy condition, representing a regulatory fit effect. That is, participants were expected to be more engaged with the task when their regulatory focus more closely matched the regulatory focus expressed by the group than when their regulatory focus matched the group to a lesser extent. To test this prediction, general task engagement factor scores were regressed onto relative promotion focus, success strategy condition, and their interaction term. However, the hypothesized interaction did not obtain, $\beta = .03, p = .76$. Thus, a regulatory fit effect was not observed for the task engagement factor score measure. No other effects were significant, $p_s > .22$.

The second key prediction was a significant was a three-way interaction among relative promotion focus, success strategy condition, and entitativity condition. This interaction would suggest moderation of the regulatory fit effect by group entitativity. To test this prediction, general task engagement scores were regressed onto relative promotion focus, success strategy condition, and all possible interaction terms (three two-way interactions and one three-way interaction). However, this three-way interaction also failed to obtain, $\beta = -.03, p = .84$. No other effects were significant, $p_s > .31$.

Performance. The first key prediction was an interaction between relative promotion focus and success strategy condition, again representing a regulatory fit effect. Participants were expected to solve more anagrams when their regulatory focus more closely matched that of the group than when their regulatory focus less closely matched that of the group. To test this prediction, the number of anagrams solved was regressed onto relative promotion focus, success strategy condition, and their interaction term. However, the hypothesized interaction did not obtain, $\beta = .11, p = .28$. Thus, a regulatory fit effect was not observed for task performance. No other effects were significant, $p_s > .12$.

The second key prediction was a significant was a three-way interaction among relative promotion focus, success strategy condition, and entitativity condition. This interaction would suggest moderation of the regulatory fit effect by group entitativity. To test this prediction, the number of anagrams solved was regressed onto relative promotion focus, success strategy condition, and all possible interaction terms. Contrary to the hypothesis, the three-way interaction also failed to obtain, $\beta = -.08, p = .58$. No other effects were significant, $p_s > .31$.

Persistence. The first key prediction was an interaction between relative promotion focus and success strategy condition, again representing a regulatory fit effect. Participants were expected to spend more time attempting to solve unsolvable anagrams when their regulatory
focus more closely matched that of the group. To test this prediction, time spent attempting unsolvable anagrams was regressed onto relative promotion focus, success strategy condition, and their interaction term. However, the hypothesized interaction did not obtain, $\beta = -.17, p = .11$. Thus, a regulatory fit effect was not observed for anagram persistence. No other effects were significant, $ps > .62$.

The second key prediction was a significant three-way interaction among relative promotion focus, success strategy condition, and entitativity condition. This interaction would suggest moderation of the regulatory fit effect by group entitativity. To test this prediction, time spent attempting unsolvable anagrams was regressed onto relative promotion focus, success strategy condition, and all possible interaction terms. Contrary to the hypothesis, the three-way interaction also failed to obtain, $\beta = -.06, p = .66$. This analysis also revealed a significant direct effect of entitativity condition, $\beta = -.23, p = .04$. Thus, participants in the low entitativity condition persisted longer ($M = 205.68s$) than did participants in the high entitativity condition ($M = 170.98s$). No other significant effects were observed, $ps > .32$.

**Enjoyment.** The first key prediction was an interaction between relative promotion focus and success strategy condition, again representing a regulatory fit effect. Participants were expected to enjoy the anagram task more when their regulatory focus more closely matched that of the group. To test this prediction, task enjoyment was regressed onto relative promotion focus, success strategy condition, and their interaction term. However, the hypothesized interaction did not obtain, $\beta = .12, p = .25$. Thus, a regulatory fit effect was not observed for anagram enjoyment. No other significant effects were observed, $ps > .10$.

The second key prediction was a significant three-way interaction among relative promotion focus, success strategy condition, and entitativity condition. This interaction would suggest moderation of the regulatory fit effect by group entitativity. To test this prediction, task enjoyment was regressed onto relative promotion focus, success strategy condition, and all possible interaction terms. Contrary to the hypothesis, the three-way interaction also failed to obtain, $\beta = .10, p = .48$. No other significant effects were observed, $ps > .25$.

**Discussion**

The current work aimed to replicate previously observed regulatory fit effects and to extend the regulatory fit literature by examining the role of entitativity in group-level regulatory fit. It was expected that an interaction between participants’ own regulatory focus and the regulatory focus emphasized by the success strategies participants read would significantly predict their performance, persistence, and enjoyment in a subsequent anagram task. Further, it was expected that these relationships would be moderated by group entitativity such that greater group entitativity would produce stronger fit effects. However, none of these findings was observed.

Because of this experiment’s inability to reproduce previously observed fit effects, it is useful to explore possible explanations for these null findings. Possible contributors to the null results include measurement of outcomes, measurement of regulatory focus, construct issues, and limitations of the experimental design. Each of these possible contributors is examined below.

**Measurement of Regulatory Fit Outcomes**

One possible explanation for null results is that outcome measures did not properly capture the hypothesized effects. Of the possible explanatory factors listed, we believe this is the least likely contributor. First, the three outcomes (i.e., performance, persistence, and enjoyment) were selected because a number of previous studies have observed the effect of regulatory fit on these outcomes (e.g., Förster et al., 1998; Freitas & Higgins, 2002; Shah et al., 1998). Moreover,
the measures used to capture these outcomes are nearly identical to the measures used in this previous research. Finally, the outcome measures were positively related, which indicates there was meaningful variability in each measure and that the measured did relate to each other, which is suggestive of their validity.

**Measurement of Regulatory Focus**

Another likely contributor to the lack of significant findings is the study’s use of the CRFS. The low Cronbach’s alphas found for the CRFS promotion and prevention subscales suggest that this measure, at least as used in the current study, may not adequately assess participants’ actual promotion and prevention. If participants’ promotion and prevention focus were not accurately measured, then this effectively precluded proper testing of regulatory fit effects.

Among past published studies measuring regulatory focus, few have used the CRFS. However, at least one study has reported similar issues with scale reliability for the CRFS (Yang, Stamatogiannakis, & Chattopadhyay, 2015). In this study, the promotion subscale of the CRFS yielded acceptable reliability (α = .62), whereas the prevention subscale did not (α = .43). Correlational analyses of these items revealed that the low reliability of the prevention subscale was driven predominantly by a single reverse-coded item (“Not being careful enough has gotten me into trouble at times”; Yang et al., 2015). Thus, it is possible that the poor reliability of the CRFS subscales in the current work are attributable to the subscales themselves. However, it is also possible that a lack of participant engagement contributed to the subscales’ low reliability. This possibility is illustrated by another study that used the CRFS, which examined regulatory fit’s effects on motivation to learn from and perceived helpfulness of a supplemental education course (Zhang, 2016). In the study, participants read statements advocating the use of a supplemental education course that were framed to reflect either promotion focus or prevention focus. Results showed that participants whose dispositional regulatory focus matched the focus of the advocacy statements perceived the course as more helpful and were more motivated to learn from the course as compared to participants whose dispositional regulatory focus did not match the focus of the advocacy statements. No issues of scale reliability were reported for the study. Importantly, however, students were encouraged to complete the CRFS carefully by being told that their completion of the measure was related to their final score for their course (Zhang, 2016). Because participants in the current study did not receive any such encouragement, it is possible that the lack of reliability found for the CRFS in the current study stems from a lack of participant engagement.

**Construct-Related Issues**

Chief among the possible explanations for the current study failure is a concern with construct validity. Regulatory fit theory, as operationalized in many studies (e.g., Förster et al., 1998; Spiegel et al., 2004), assumes that, at any given time, people are either relatively more promotion oriented or more prevention oriented. Thus, promotion and prevention are taken to be opposite poles along a single continuum and should, presumably, be negatively related to each other. However, this study observed that promotion and prevention focus, as measured by the CRFS, were positively correlated ($r = .206, p = .001$). Yet, this modest positive correlation is not a phenomenon uniquely associated with the CRFS. For example, the promotion and prevention subscales of other commonly used regulatory focus measures, such as the regulatory focus questionnaire (RFQ; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001) and the scale developed by Lockwood, Jordan, and Kunda (2002), are often modestly positively correlated (Haws et al., 2010). To the author’s knowledge, no published work to date has explained why
many regulatory focus measures show positive correlations between promotion and prevention subscales. This is especially concerning considering that regulatory focus theory emphasizes the orthogonality of promotion focus and prevention focus (e.g., Förster, Higgins, & Bianco, 2003; Scholer & Higgins, 2008). What remains clear is that if promotion and prevention are positively related, then regulatory fit effects relying on chronic differences in promotion and prevention orientations may be difficult to observe.

Another possible contributor to the null results reported in the current study concerns the strength of regulatory fit effects. Though a meta-analysis of studies specifically testing regulatory fit remains to be conducted, a meta-analysis of general regulatory focus and work-related outcomes shows mean sample-weighted correlations ($\bar{r}$) between promotion focus and prevention focus, respectively, and task performance of .13 and -.04 (Lanaj, Chang, & Johnson, 2012). In other words, it appears that regulatory focus effects are statistically weak. Thus, regulatory fit effects may be difficult to create and detect, let alone moderate, which may explain the lack of replication and moderation found in the current work.

**Design Limitations**

Limitations of the experimental design may have also contributed to the null findings. For example, this paradigm required that participants view the group members they read about as relevant ingroup members for regulatory fit effects to occur. This is because information about which strategies are successful for particular students is only relevant to the self insofar as those students are seen to be similar to the self. However, in the study, group members were described as a *subset* of Miami University students. Thus, it is possible that participants engaged in subtyping of these students, in which group members who do not fit some group stereotype or expectation are clustered together and then mentally set aside as exceptions (Maurer, Park, & Rothbart, 1995). It is difficult to say what stereotypes new students may have about students at their university, but it is possible that the success strategies (written by the author, a graduate student) that participants read differed in some way from the stereotypes or expectations participants held about students at their university. For example, it is possible that participants expected fellow students not to engage in planful college success-oriented action. If this is the case, then participants might have mentally set aside the ostensible strategy writers as outliers of the group, thus rendering them psychologically as not part of the ingroup. It is also possible that participants simply viewed the group as an outgroup, which would also make the group’s self-regulatory norms largely irrelevant for participants or render manipulations of their entitativity irrelevant as well.

Another limitation of the experimental design is the extensive number of intrapsychic processes required for regulatory fit effects to obtain. Participants were required to extract regulatory focus cues from group member messages, view these messages as relevant to their own behavior, compare their own regulatory focus to the regulatory focus norm of the group to experience fit or lack of fit, and finally carry this sense of fit or lack of fit into the next task. In particular, the carrying of sense of fit from one task into another appears especially problematic. In contrast to the current work, other studies of regulatory fit (e.g., Shah et al., 1998) simply embed regulatory focus cues into the task directions themselves. Thus, regulatory fit or lack thereof is experienced by participants during goal pursuit as opposed to being experienced prior to goal pursuit and being carried into the next task.

**Future Directions**

Because of the current study’s inability to reproduce regulatory fit effects, a test of entitativity’s impact on group-level regulatory fit was precluded. Thus, one possible direction for
future work involves using a paradigm more conducive to producing experiences of regulatory fit. For example, a future study similar to the current work could be conducted in which the target group represents an important ingroup rather than an anonymous, random subset of individuals. To reduce the number of intrapsychic steps required for regulatory fit to occur, future work would also do well to ensure that regulatory focus cues occur during the relevant task itself rather than beforehand. For example, a future study could be designed such that participants work on a task with a number of purported ingroup members who either share or do not share participants’ predominant regulatory focus. This way, regulatory focus cues would be directly relevant to the goal being pursued and experienced during goal pursuit itself. Because the current study possessed a number of limitations that made the interpretation of results difficult, and because hypothesized results did not obtain, the current work was not especially revelatory and instead leaves many questions to be explored in future work.
References


Table 1

Zero-Order Correlations

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
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<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Promotion focus</td>
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<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Prevention focus</td>
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<td>.17*</td>
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<td>4. Anagrams solved</td>
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<td>.00</td>
<td>-.01</td>
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<td>-.01</td>
<td>.08</td>
<td>.43**</td>
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</tr>
<tr>
<td>6. Task enjoyment</td>
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<td>-.08</td>
<td>.02</td>
<td>.37**</td>
<td>.15*</td>
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* p < .05. ** p < .01
Appendix A
Composite Regulatory Focus Scale (CRFS; Haws, Dholakia, & Bearden, 2010)

Promotion Focus (5 items)
1. When it comes to achieving things that are important to me, I find that I don’t perform as well as I would ideally like to do. (R)
2. I feel like I have made progress toward being successful in my life.
3. When I see an opportunity for something I like, I get excited right away.
4. I frequently imagine how I will achieve my hopes and aspirations.
5. I see myself as someone who is primarily striving to reach my “ideal self” – to fulfill my hopes, wishes, and aspirations.

Prevention Focus (5 items)
1. I usually obeyed rules and regulations that were established by my parents.
2. Not being careful enough has gotten me into trouble at times. (R)
3. I worry about making mistakes.
4. I frequently think about how I can prevent failures in my life.
5. I see myself as someone who is primarily striving to become the self I “ought” to be – to fulfill my duties, responsibilities, and obligations.
Appendix B
Group Member Success Strategy Responses

**Promotion Condition**
1. My best strategy for success is study, study, study. I’m eager to study well in advance of exams so that I get the highest grade possible.
2. It might sound silly, but taking all my assignments seriously is my success strategy. Each assignment completed allows me to earn points and puts me closer to my ideal grade.
3. Success in college isn’t all about academics. I try to balance school, my social life, and my alone time to get the most out of my experiences.
4. One of the most obvious, but still most important success strategies is effective studying. I try to study often to avoid forgetting important material and getting poor grades.
5. I can’t stress enough how important it is to go to class. I’m always eager to learn the material so that I can be successful.
6. I think the best way to succeed in college is to fulfill your obligations. My success strategy is to take classes that give me credit towards my major, even if I don’t particularly enjoy them.
7. Physical well-being is an important but sometimes overlooked part of being successful in college. I try to stay healthy by getting plenty of rest and seeking out healthy food options. I really try to pursue activities that keep me active.

**Prevention Condition**
1. My best strategy for success is study, study, study. I’m careful to study well in advance of exams so that I don’t miss anything important.
2. It might sound silly, but taking all my assignments seriously is my success strategy. Each assignment completed keeps me from losing points and puts me farther away from failure.
3. Success in college isn’t all about academics. I try to balance school, my social life, and my alone time so that I can avoid missing out on experiences.
4. One of the most obvious, but still most important success strategies is effective studying. I try to study often so that I get the most out of the material and get the best grades that I can.
5. I can’t stress enough how important it is to go to class. I’m always diligent not to miss the material so that I can avoid failing.
6. I think the best way to succeed in college is to pursue your ideals. My success strategy is to take classes that I enjoy, even if they don’t give me credit towards my major.
7. Physical well-being is an important but sometimes overlooked part of being successful in college. I try to avoid getting sick by getting plenty of rest and keeping away from unhealthy food options. I really try to avoid being inactive.
Appendix C
Anagram Solving Task

Directions
Before you tell us about your perceptions of the success strategies you just read, we would like you to complete a word scramble task. This task is known by researchers to significantly predict college success. Students who perform well on this task tend to be successful in college, whereas those who perform poorly on this task generally go on to have poorer grades and higher dropout rates.

In this task, you will be asked to unscramble strings of letters to form words. On the screens that follow, you will be shown a number of scrambled words, presented one at a time. In the blank provided below each scrambled word, please type in the correct, unscrambled word. Each word scramble has exactly one correct solution.

Example:
MCSIU = MUSIC

You will have up to 3 minutes to solve each word scramble. If you solve the current word scramble or give up on solving it before 3 minutes has elapsed, you may continue to the next word scramble by clicking ">>." If you do not solve the current word scramble after 3 minutes, you will be automatically advanced to the next page. Please also note that you will NOT be able to go back to unsolved word scrambles once you have moved past them, so you must attempt each word scramble one at a time, in the order they are provided.

Anagrams

Easy
BNEHC [BENCH]
EGDHE [HEDGE]
UODLW [WOULD]

Medium
RNEPU [PRUNE]
HELWI [WHILE]
LUBDI [BUILD]

Difficult
KGSWA [GAWKS]
IGTNL [GLINT]
RTADI [TRIAD]

Unsolvable
ONECI
RTENA
ACELO