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Predicting Exercise and Health Behavioral Intentions: Attitudes, Subjective Norms, and Other Behavioral Determinants

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By comparing exercise and health domains, the current experiment extends recent findings that within-participant analyses of attitudes and subjective norms predict behavioral intentions well (Finlay, Trafimow, & Moroi, 1999). Within-participant analyses show that health behaviors are particularly likely to be influenced by subjective norms, and those that are relatively normatively influenced are intended to be performed more than those that are not. However, neither was true of exercise behaviors. Additionally, other potential predictors for exercise (e.g., indirect attitudinal measures and goal-oriented attitudes and intentions) correlated more strongly with exercise behavioral intentions than did general health attitudes and intentions.

Prior experiments using attitudes and subjective norms to predict behavioral intentions (Fishbein, 1967, 1980; Fishbein & Ajzen, 1975) have shown that subjective norms have a more complex relationship to health behavioral intentions, compared to other types of behavioral intentions (Finlay, Trafimow, & Jones, 1997; Finlay, Trafimow, & Moroi, 1999). The nature of the relationship will be detailed later. Given the importance of exercise on health, it is conceivable, but as yet untested, that intentions to perform exercise behaviors are influenced by similar patterns of attitudes and subjective norms. To test this hypothesis, between- and within-participants analyses were employed to compare the extent to which attitudes and subjective norms predict exercise intentions versus health intentions. Between-participants analyses are performed on individual behaviors across people, whereas within-participant analyses are performed on individuals across a number of behaviors (Trafimow & Finlay, 1996; Finlay et al., 1999). A brief review of these analyses is presented in the following section.

The theory of reasoned action (TRA; Fishbein, 1967, 1980; Fishbein & Ajzen, 1975) stipulates that attitudes and subjective norms predict behavioral

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intentions, which, in turn, predict actual behaviors. *Attitude* can be defined as whether one likes or dislikes performing a behavior (Trafimow & Finlay, 1996); while *subjective norm* can be defined as whether one perceives that his or her significant others endorse or disapprove of his or her performance of a behavior (Ajzen & Fishbein, 1980). Multiple regression techniques are traditionally employed to determine the relative influence of an attitude and subjective norm for predicting a given behavioral intention. If the attitude beta weight is larger than the subjective norm beta weight, then the behavior is considered attitudinally controlled (AC). If the reverse is true, then the behavior is deemed normatively controlled (NC; Trafimow & Finlay, 1996).

Usually attitudes predict behavioral intentions better than do subjective norms (Finlay et al., 1997; Hausenblas, Carron, & Mack, 1997; Kraus, 1995; Miniard & Cohen, 1981; Trafimow & Finlay, 1996). Specifically, attitudes are associated with greater regression indexes (e.g., beta weights) than are subjective norms. This has been true in predicting exercise behaviors as well. In fact, meta-analyses and reviews of experiments that have used attitudes and subjective norms as predictors of exercise behavioral intentions show that attitudes and, to a lesser extent, subjective norms are good predictors (Blue, 1995; Godin, 1994; Hausenblas et al., 1997). For instance, one meta-analysis (Hausenblas et al., 1997) showed that exercise attitudes and behavioral intentions were more highly correlated ($r = .52$) than were subjective norms and intentions ($r = .27$). In addition, exercise intentions predicted actual behavior well ($r = .74$). Kraus (1995) performed a similar meta-analysis that showed that measures of intentions and behaviors that closely follow the principle of compatibility correlated even better ($r = .54$).³

In addition, Trafimow and Finlay (1996) have shown that individual differences in how people tend to weight attitudes and subjective norms across a number of behaviors is as sensitive a way to predict intentions as is measuring attitudes and subjective norms across a population for a single behavior. Some people weight subjective norms more than others and vice versa, and this also predicts behavioral intentions. Specifically, the within-participants method resulted in a median within-participants multiple correlation of .82, compared to the more traditional between-participants median multiple correlation of .69. In

³Although using compatible measures clearly improves prediction, there is some disagreement as to the number of items required to adequately measure attitudes and subjective norms. It is traditional to use at least three items for the attitude measure. However, several experiments have shown that a single attitude item that asks how much an individual likes or dislikes performing a behavior is also an effective attitude measure (Finlay et al., 1997; Trafimow & Finlay, 1996, in press-a, in press-b; Ybarra & Trafimow, 1998). Similarly, subjective norms have been measured by simply asking how much a person's significant others think the person should (or should not) perform the behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Finlay et al., 1997; Trafimow & Finlay, 1996; Ybarra & Trafimow, 1998).
addition, they used the within-participants attitude–intention correlations and the within-participants subjective-norm–intention correlations to classify people, rather than behaviors, as attitudinally or normatively controlled (AC and NC, respectively). AC people have within-participants attitude–intention correlations that are larger than their subjective-norm–intention correlations, whereas people with the reverse pattern are NC (Trafimow & Finlay, 1996).

In an attempt to explain why subjective norms generally have a small but significant influence on most behavioral intentions, Trafimow and Finlay (1996) found that removing the NC subsample from the whole sample resulted in the median unique variance accounted for by subjective norm of .00 across 32 behaviors. If removing the NC subsample had not affected the variance accounted for in intentions by subjective norms, then this would have suggested that distinguishing NC from AC people was irrelevant for explaining findings previously obtained with traditional between-participants analyses. However, since that was not the case, Trafimow and Finlay concluded that the traditionally small, but significant influence of subjective norm on behavioral intention was a result, in part, of the inclusion of the minority of NC people in the sample.

Two subsequent experiments using health behaviors showed that the influence of subjective norms on intentions also was influenced by the domain of behavior (Finlay et al., 1997, 1999). Although the health experiments showed that within-participants analyses resulted in similar findings as those described in the previous Experiment 2,4 they also obtained several results that were unique to the health domain.

First, almost half of the health behaviors continued to have a significant normative component even after the NC subsample was removed from the whole sample. Second, unlike the experiment using a variety of unrelated behaviors (Trafimow & Finlay, 1996), the health behavior experiment showed that the NC subsample had a median subjective norm beta weight (.42) larger than the median attitude beta weight (.31; Finlay et al., 1997). This suggests that significant others are considered more heavily for people who are NC in health behavior than they are for people who are NC on a number of domain general behaviors. Third, unique to the domain of health, health behaviors with a relatively small normative influence (i.e., with a normative beta weight less than .25) were less likely to be intended to be performed than behaviors with larger normative influence for two health experiments. This pattern is reversed for other behaviors (Finlay et al., 1999). Finally, a significantly greater number of health behaviors was intended to be performed more by NC people than by AC people, but this was not true for domain-general behaviors. In sum, these experiments

4Specifically, (a) a minority of participants were defined NC; and (b) between-participants and within-participants multiple correlations resulted in excellent prediction of behavioral intentions from attitudes and subjective norms (Mdn between-participants Rs = .74 and .68; Mdn within-participants Rs = .82 and .85, for the Finlay et al., 1997 and 1998, experiments, respectively).
indicate that some behaviors are normatively influenced only because of the inclusion of NC people, while health behaviors appear to be uniquely influenced by subjective norms even for solely AC subsamples.

There are interesting theoretical as well as application benefits that come from comparing exercise and health using TRA. Despite mixed results, health behaviors are often viewed as being related to exercise behaviors (see Dishman, 1993, for a review). People who exercise may be doing so for the purpose of maintaining health; they may value healthfulness or feel that they have more control over their health, and they may also engage in other healthful activities compared to those who do not exercise (e.g., Hawkes & Holm, 1993). If health and exercise behaviors are closely associated, perhaps subjective norms play similar roles in both domains. For instance, as was found in the health domain, exercise behaviors with relatively large subjective norm beta weights may be intended to be performed more than those with smaller subjective norm beta weights. Alternatively, there are other predictors of exercise behavioral intentions that suggest that exercise is often performed because of other reasons not having to do with health. For instance, people may exercise to try to improve their looks or to successfully compete in a type of sport. If so, the role of subjective norms may be different for predicting exercise behaviors than for predicting health behaviors.

Other Predictors of Exercise Behavioral Intentions

Although employing single compatible measures is theoretically consistent with the TRA's proposal that direct measures should best measure the constructs, exercise experts (e.g., Dishman, 1994; Godin, 1994) have argued that a single measure of attitude and subjective norm may not adequately explain why people engage in and maintain exercise-related behavior, and consequently suggest using multiple indirect measures (i.e., measuring the reasons for exercising). In addition, Godin and colleagues (Godin, Valois, Shephard, & Desharnais, 1987; Valois, Desharnais, & Godin, 1988; see also Triandis, 1980) provided evidence that past behavior or habit is particularly likely to account for additional variance, above attitudes and subjective norms, in exercise behavior. Others argue for the importance of other determinants on predicting exercise intentions, such as generally engaging in healthful behaviors (Dishman, 1993; O'Brien Cousins, 1996) and behaviors related to goal achievement (Dishman, 1993; Maddux, 1993). For instance, Dishman (1994) argued that individual differences in willpower and motivation are likely to explain additional variance in exercise behavior. To provide a comprehensive experiment that included these determinants, we also measured the reasons for exercise (i.e., indirect measures of exercise intention), actual past exercise behavior, and attitudes and behavioral intentions to perform health behaviors and intentions to successfully complete other goals.
The current experiment employs between- and within-participants analyses using TRA predictors to compare exercise behavioral intention prediction with health behavioral prediction, and explores other possible determinants of exercise intention determinants. If exercise behaviors differ from health behaviors, we would expect the following for exercise behaviors: (a) Removing the NC subsample would decrease the importance of subjective norms on exercise behavioral intentions; (b) even the NC subsample would have a median attitude beta weight larger than the median subjective norm beta weight; (c) a small normative influence would be unrelated to the performance of the exercise behavior; and (d) NC people should not intend to perform exercise behaviors more than AC people. The opposite of these predictions would be made for health behaviors. Additional determinants of exercise behavioral intention (i.e., indirect measures of exercise, past exercise behavior, and the predictors of health and goal-oriented behaviors) should also correlate well with exercise intention.

Method

Participants

Participants were 266 (87 male, 179 female) individuals from a southwestern North American university and 71 (25 male, 43 female, 3 gender not specified) individuals from three local activity centers (i.e., health clubs). Activity-center participants included a few more participants who were older, compared to university participants. Specifically, the median age group for both groups of participants was between 19 and 24 years. However, only 65% of the health-club participants were younger than 29 years, whereas 88% of the university participants were younger than 29 years. Not surprisingly, the median amount of time spent exercising was higher for activity-center participants (5 to 6 times per week) than for university students (3 to 4 times per week).

Materials

The questionnaire comprised 42 attitude, subjective norm, and behavioral intention items, each employing 7-point scales. Intention questions asked participants to indicate how much they intend or do not intend to perform specific behaviors. Attitude questions asked participants to indicate how much they liked or disliked to perform the behaviors. Subjective norm questions asked participants how much they thought their significant others thought they should or should not perform the behaviors. For instance, a set of intention, attitude, and subjective norm measures would read: "I intend/do not intend to exercise," "I like/dislike to exercise," and "Most others who are important to me think I should/should not exercise." In addition, participants were asked their age range,
gender, and the average number of times they exercised each week, which was used as the measure of past exercise behavior.

**Behavior Selection**

Multiple behavioral intentions (and their associated attitudes and subjective norms) are required to perform within-participants analyses (traditionally this analysis has been based on at least 30 behaviors; Finlay et al., 1997, 1999; Trafimow & Finlay, 1996). The use of multiple behavioral intentions is not only necessary, but increases the likelihood that the AC/NC classification will generalize to a larger number of behaviors within the relevant domains. Several methods were involved to ensure relatively unbiased selection of the behaviors included in the current experiment. Our goal was to obtain a list that would include health, exercise, and a few goal-achievement behavioral intentions. We selected 36 behaviors (17 health, 16 exercise, and 3 general goal-oriented behaviors) from a larger group of behaviors that had been generated by the authors and upper-level undergraduate and graduate students familiar with issues typically presented in undergraduate lectures and research in sports, health, or applied social psychology (see the Appendix for a complete list of the behaviors used in the experiment).

Additional exercise behavioral intention, attitude, and subjective norm measures that state reasons for exercising were included to explore their relationship with the direct, single-item exercise attitude and behavioral intention measure. Consequently, we performed a small pilot experiment involving 28 athletes, regular exercisers, and undergraduate college students to choose the specific reasons for engaging in exercise. The pilot experiment included reasons suggested by students who exercise and by past research that suggests that specific beliefs concerning attractiveness, health, and fitness goals are related to engaging in exercise (Davis, Fox, Brewer, & Ratusny, 1995). Participants indicated which reasons they would endorse as main reasons for engaging in exercise. At least two thirds of the participants in the pilot experiment endorsed the six reasons included in the main experiment: to obtain the ideal body shape (92%), because it makes me feel good (92%), to attain a high level of physical fitness (75%), to become a competitive athlete (78%), to win a competitive event (71%), and to avoid feeling guilty (67%).

**Procedure**

Participation involved filling out 42 behavioral measures (exercise, health, goal, and specific exercise reasons), each of which included attitude, subjective

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5This inclusion rate is slightly higher than Ajzen and Fishbein's (1980) 75% suggestion because we felt that a more inclusive standard would better reflect the opinions of our population.
norm, and behavioral intentions questions; and answering demographic and exercise behavior items. Participants from the clubs were allowed to answer the questionnaire at home and return it at their convenience. Students participated at the university in a single sitting in a classroom or lab room.

Results

The majority of participants (70%) indicated that they exercised at least three times each week. This is much higher than the national average (e.g., reported estimates that 10% of adults in the United States engage in vigorous and frequent activity; Dishman, 1993), most likely because we purposely chose to select participants from local health clubs and university students, many of whom attended physical-education classes or participated in team sports, to ensure that the behaviors being studied would be relevant.

Between- and Within-Participants Analyses of the TRA

Consistent with past TRA experiments that have employed within-participants analyses, the current results show that predicting behavioral intentions from within-participants analyses of attitudes and subjective norms (Mdn R = .87) is as effective as using traditional between-participants analyses (Mdn R = .76). Also, as with the majority of behaviors, attitudes tended to predict behavioral intentions better than subjective norms for both between-participants (Mdn beta weights for attitudes and subjective norms = .63 and .23, respectively) and within-participants analyses (Mdn beta weights for attitudes and subjective norms = .56 and .32, respectively).

We also compared the health and exercise domains using both within-participants and between-participants analyses. As is the trend, the between-participants median correlations for the two domains were comparable (.77 and .69 for exercise and health, respectively) to the within-participants analyses (mean R = .81 and .80, for exercise and health domains, respectively). Interestingly, the results of within-participants analyses show clear differences between the two domains, but the results of the between-participants analyses do not. Most strikingly, the within-participants analyses show that subjective norms clearly have greater importance in the health domain than in the exercise domain. Specifically, the within-participants mean beta weights in the health domain were .52 for subjective norms and .28 for attitudes, whereas the mean within-participants beta weights in the exercise domain were only .34 for subjective norms and .60 for attitudes. The difference between the two domains is obvious: The health domain had a within-participants attitude beta weight that was smaller than the health normative beta weight, whereas the exercise attitude beta weight was much larger than the associated normative beta weight (and larger than the health
attitude beta weight). In contrast, the between-participants beta weights suggest that the importance of attitudes (.62 for exercise and .67 for health) and subjective norms (.25 and .22 for exercise and health, respectively) was comparable for both domains.

In addition, the between-participants analyses were consistent with prior findings (Finlay et al., 1999) and our expectations because health intentions with a normative influence greater than .25 were intended to be performed more than health behaviors with a smaller normative influence ($M = 5.93$ and $3.38$, respectively, where the larger number indicates more intention to engage in the behavior), $t(357) = 30.80$, $p < .001$. This is unique to the health domain because, like domain-general behaviors, there was no evidence that exercise behaviors with relatively large subjective norm influence were performed more than those with smaller influence ($M = 4.30$ and $5.27$, respectively), $t(357) = .70$, $p > .10$.

**Attitudinally and Normatively Controlled Participants**

The participants were deemed attitudinally (AC) or normatively (NC) controlled if they had greater attitude–intention correlations or subjective-norm–intention correlations, respectively. Consistent with past research (Finlay et al., 1997, 1999; Trafimow & Finlay, 1996), the majority of participants (68.5%, or 231) were under attitudinal control, whereas only 30% (or 104) were under normative control. Two participants were neither attitudinally nor normatively controlled. Further, a slightly larger but significant ($p < .05$) percentage of people who indicated that they exercised at least three times a week were attitudinally controlled, compared to those who reported exercising two times or less per week (i.e., of the 236 people who indicated that they exercised at least three times a week, 70% [165] were deemed to be under attitudinal control, whereas of the 99 who indicated that they exercised less, only 64% [63] were deemed to be under attitudinal control).

Between-participants analyses comparing the AC and NC subsamples illustrate the importance of considering the AC–NC distinction in both domains. Specifically, NC people have comparable median attitude and subjective norm beta weights in exercise (.43 and .33, respectively) and in health behaviors (.35 and .42). These results are almost identical to those found by Finlay et al. (1997): The 1997 experiment reported that the NC subsample had median attitude and

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6 Although these analyses show that subjective norms are more important in health behavioral intentions, we caution the reader to consider that other health experiments have not found a greater influence by subjective norms than by attitudes. This seemingly extreme finding may be a result of the specific behaviors used or of the inclusion of a particularly exercise-oriented population.

7 Activity-center and university samples were similar in their tendency to be AC or NC across the domains (e.g., 70% of activity-center participants and 68% of university students tended to be attitudinally controlled).
subjective norm beta weights of .31 and .42. In contrast, AC people had larger median attitude beta weights in both domains, compared to their median subjective norms (i.e., .73 and .17 for exercise attitude and subjective norm, and .68 and .15 for health).

However, further analyses show differences between the two domains. Similar to the Finlay et al. (1999) results in health, NC people indicated that they intended to perform 63% of the health behaviors more than AC people, but only 30% of the exercise behaviors more than AC people (p = .004 using Fisher’s exact test), and two of the three goal-oriented behaviors. Thus, NC people reported more intention to perform most health behaviors, but they did not report more intention to perform exercise behavior, compared to the AC subsample.

Correlations Between Potential Determinants and Intention to Exercise

All of the attitudinal reasons for exercise correlated with the general intention to exercise (Table 1), but only two of these correlated as well as the single specific attitudinal question (i.e., “To attain my ideal body shape” correlated .59, and “To maintain a high level of physical fitness” correlated .61 with intention; whereas the single measure correlated .59 with intention to exercise). Consistent with the TRA, the composite measure that contained all of the reasons also correlated well with exercise intention (.59).

We also explored whether the health and goal-oriented behavioral intentions and their associated attitudes would correlate with exercise behavioral intention. We found that these behavioral intentions tended to correlate slightly higher with exercise intention than did their associated attitudes. However, only 4 of the 16

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Table 1

<table>
<thead>
<tr>
<th>Reason</th>
<th>Intention to Exercise</th>
</tr>
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<tbody>
<tr>
<td>To obtain the ideal body shape</td>
<td>.59</td>
</tr>
<tr>
<td>Because it makes me feel good</td>
<td>.56</td>
</tr>
<tr>
<td>To attain a high level of physical fitness</td>
<td>.61</td>
</tr>
<tr>
<td>To become a competitive athlete</td>
<td>.23</td>
</tr>
<tr>
<td>To win a competitive event</td>
<td>.30</td>
</tr>
<tr>
<td>To avoid feeling guilty</td>
<td>.11</td>
</tr>
</tbody>
</table>

Note. All correlations are significant (p < .05).
health behavioral intentions were correlated more than .25 with exercise intention. These were as follows: eat a balanced diet (.31), drink plenty of water (.35), perform protective techniques associated with my sport (.28), and avoid injuring myself (.29). These correlations are likely to be a result of the particular appropriateness of these health behaviors to exercise rather than a general health-exercise behavioral domain consistency.

More interesting, however, is that the intentions and attitudes of two of the three goal-oriented behavioral measures correlated fairly well with intentions to exercise. Specifically, intentions and attitudes to “accomplish the life goals I set for myself” correlated .36 and .34 with intention to exercise, and intentions and attitudes to “complete tasks other than physical activity that are important to me” correlated .25 and .26 with exercise intention. The other goal-oriented intentions and attitude (“To attain my life goals even when they seem unrealistically difficult”) correlated less well (.19 and .13).

Finally, we also correlated current exercise behavior with exercise intention. The number of times participants engaged in exercise in a typical week correlated .47 with one’s intention to exercise. In addition, a multiple regression equation in which attitude and subjective norm were entered first showed that the two accounted for .48 of the variance in intention to exercise. When past behavior was entered in a second step, the variance accounted for significantly increased to .51 ($\Delta R^2 = .03$, $p < .001$).

Discussion

TR A and the Comparison of Two Domains

The current data show that a clear distinction exists between the health and exercise domains. First, we hypothesized that removing the NC subsample would reduce the importance of subjective norms on exercise behavioral intentions, but not for health behavioral intentions. Although this was found to be the case in exercise behaviors, the health behaviors failed to replicate earlier experiments. That is, for exercise behaviors, subjective norm beta weights were reduced from .34 in the whole sample to .17 in the AC subsample; and for health behaviors, the subjective norm beta weights were reduced as well (from .52 to .15). Thus, the pattern of TR A predictors for exercise behavior was more consistent with domain general behaviors than it was with the previous pattern of TR A predictors for health behaviors. Second, we hypothesized that the NC subsample would have a median attitude beta weight larger than the median subjective norm beta weight for exercise behaviors, but not for health, and this too was found to be true. Third, we correctly hypothesized that a small normative influence would be unrelated to the performance of the exercise behavior, but would influence health behaviors. Finally, although NC people intended to perform health behaviors
more than did AC people, we correctly hypothesized that NC people would not perform exercise behavior more than would AC people. Consequently, it is clear that regardless of the relationship between health and exercise, the two domains have different relationships with TRA predictors.

Additional Determinants of Exercise Intention

A larger number of health attitudes and intentions were measured than were goal-oriented attitudes and behavioral intentions. However, we found that in contrast to the health measures, which were not particularly highly correlated with intentions to exercise, the goal-oriented measures were. Although interesting, additional exploration of this finding is necessary before much can be said of it. For instance, a few of the health measures that were particularly related to exercise correlated a bit better than did the goal-oriented behavioral intentions. As Finlay et al. (1999) suggested, taxonomy of the different domains and subsets of the domains should prove useful in further exploring the relatedness of the domains.

The reasons for engaging in exercise were generally less correlated with intention to exercise than the single direct measure of attitude. This suggests that performing elicitation experiments to discover salient attitudes is likely to be more useful for tailoring exercise intervention than for increasing the predictive relationship between attitudes and exercise behavioral intention. Obviously, a direct single-item attitude measure can be specified a priori and appears to predict intention as well or better than most indirect attitude measures (i.e., reasons for exercise). Although we agree that further exploration of the specific reasons involved in forming attitudes is fruitful, the choice to employ multi-attitudinal measures that include the reasons for behavior should depend on the goals of the research or application. That is, elicitation experiments are useful if the main goal is to change specific beliefs associated with the attitudes that predict exercise behavior.

Past exercise behavior only accounted for an additional 3% of the variance in behavioral intention over and above attitudes and subjective norms. However, we used a very general single-item measure. In contrast, Blue (1995) suggests that the predictive ability of the TRA is increased when the specifics of the exercise activity are stipulated. Consequently, the predictive aspect of the behavioral components reported here might be higher when the behavioral intention measure is compatible with the behavior measure (Ajzen & Fishbein, 1980).

One might argue that the findings that compare different domains may be influenced by social desirability or individual differences in response tendencies, rather than actual intention. However, it would be particularly detrimental to our purposes if one of the subsamples or domains were more likely to result in socially desirable answers than the other. Although this was not directly
explored, it seems that NC people would be more likely to concern themselves with social desirability or general response tendency than AC people. In contrast to the latter possibility, Finlay et al. (1999) found that the tendency for NC people to perform more health behaviors was not the result of a general response tendency. Unfortunately, they were unable to rule out the possibility that NC people reported intentions to perform more healthful behaviors because health behaviors have relatively stronger social sanctions compared to domain-general behaviors. The current experiment, however, compared health and exercise behaviors, both of which are beneficial and socially desirable. Our data are inconsistent with a social-desirability explanation. As mentioned earlier, a slightly smaller percentage of exercisers (those who reported exercising at least three times a week) were classified as NC, compared to nonexercisers. In addition, no significant differences emerged between AC and NC people in how often they exercised. Therefore, current evidence does not indicate that NC people were more likely to give socially desirable responses, compared to AC people. Of course, it was impossible to know a priori if the behaviors included in the experiment were equally socially sanctioned; however, the means of the subjective norms for health and exercise domains both indicate that people perceived others to want them to perform both types of behaviors  ($M = 6.08$ for exercise and $5.40$ for health, on a 7-point scale where high numbers indicate high normative pressure to perform the behaviors).

It is possible that NC people intended to perform more health behaviors compared to other types of behaviors than AC people because of the method of classification. In this experiment, NC people were designated as such based on the correlational patterns of all the behaviors combined. Perhaps using the specific domains for AC–NC classification would influence the current results. To examine these issues, we performed separate analyses to examine four domain-specific AC and NC subsamples (i.e., AC and NC in health, and AC and NC in exercise). However, the classification basis in this experiment seems relatively unimportant concerning the trends in the two domains because the domain patterns reported earlier remained similar. For example, people who were determined to be NC solely on the basis of their answers on health questions tended to perform 11 of 17 healthful behaviors more than did AC people, but there was no evidence for people who were determined to be NC solely in exercise to intend to perform more exercise behavioral intentions. This latter result further illustrates the importance of specifically considering the domain of behavior when predicting the importance of attitudes and subjective norms.

Although we do not expect that subjective norms are of greater importance than are attitudes for all health behaviors, the current data add considerable evidence to the importance of subjective norms in the health domain. Intervention tactics in health and exercise behavior should employ different objectives. Professionals in the health domain could manipulate subjective norms to influence
behavior. For example, health professionals could provide information concerning the importance that significant others place on the performance of the health behavior. This could be done simply by telling patients that even if they would rather not follow whatever medical advice is of interest, the people who love them would believe it was important. In addition, they could try to ensure that the influence of significant others is salient when decisions to engage in health-related behaviors are being made. This could be achieved even through relatively indirect means (e.g., employing priming techniques).

Alternatively, exercise professionals will need more information before deciding on intervention objectives. Changing attitudes appears to be key in influencing exercise behavior. However, subjective norms should not be minimized: The importance of what others believe is predominantly important for approximately one third of the people who exercise infrequently (36% were NC). Also, even among people who are AC, subjective norms are significant predictors in many exercise behavioral intentions, albeit less so than are attitudes. Future exploration should focus on the specific exercise behaviors that are particularly influenced by significant others and who of the significant others are particularly influential. More can be gleaned about exercise behavioral intentions if we determine whether the relatively smaller subjective norm influence is a result of a lack of certainty over how significant others feel, perceived ambiguity from significant others, or simply the relatively greater importance placed on internal attitudes when exercise intentions are being formed. In addition, the nature of the normative influence on exercise may be important. Perhaps norms are detrimental if perceived social pressure increases the perception that exercise is a burden. O'Brien Cousins (1996) showed that some populations (i.e., elderly women) hold subjective norms that physical exercise is inappropriate behavior. If so, exercise psychologists might want to examine the relationship between specific subjective normative beliefs and intentions. Meanwhile, intervention objectives should focus on increasing positive attitudes and decreasing negative ones, and interventions that include changing subjective norms should be based on knowledge about subjective normative beliefs for specific target groups.

In conclusion, similar to previous findings (Finlay et al., 1999), within-participants analysis using the TRA components can illustrate the differences in behavior intention in different domains. The reasons behind the importance of subjective norms in health are suggested by Finlay et al. (1997, 1999). However, actual experiments have yet to be performed to test any of the hypotheses. It would be useful to discover the mechanisms that cause these relationships because they may be applied to behavior-modification research in other types of prosocial behaviors. For instance, it is likely that subjective norms are important in health because people are confident of what their most significant others think or because there is great consensus about wanting those we love to protect their
health (Trafimow, 1994). If confidence and consensus are important mechanisms for the importance of subjective norms in health, then other areas of social psychology, including exercise and discrimination research, could benefit.

References


Appendix

Behavioral Items

All behavioral intentions begin with “I intend/do not intend to . . .” with a 7-point scale inserted between “intend” and “do not intend.”

Health behaviors:
- control my calorie intake to control my weight.
- comply with medical advice my doctor might prescribe.
- drink an excessive amount of alcohol.*
- intend to wear my seat belt.
- take appetite suppressants.*
- eat a balanced diet.
- avoid injuring myself.
- take illegal drugs.*
- eat low-fat foods.
- consume meal-replacement products in addition to eating regular meals to attain my ideal body shape.
- seek medical care when I feel ill.
- adhere to an injury rehabilitation program if I become injured.
- smoke cigarettes.*
- drink plenty of water.
- consume caffeine or other legal stimulants.*
- skip meals.*

Exercise behaviors:
- warm up before exercising.
- do extra training outside of regular practices.
- incorporate new training techniques into my exercise sessions.
- exercise to the point of physical pain.*
- concentrate on my weaknesses as an athlete in order to improve.
- exercise when it is painful.*
- train harder than other athletes who participate in my sport.
- exercise to the point of physical exhaustion.
- take analgesic drugs (painkillers) before exercising.*
- be at a healthy competitive fitness level before competing in a sports event.
- miss an exercise session.
- exercise during the “off season.”
- take performance-enhancing drugs.*
- wear the appropriate protective equipment for my particular sport.
- perform the protective techniques associated with my sport.
- exercise while injured.*
Goal-oriented behaviors:
achieve the life goals I set for myself.
complete tasks other than physical activity that are important to me.
attain my life goals even when they seem unrealistically difficult.

*These items were reverse scored based on participants' reports of their perceptions of what significant others thought participants should do.