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The Importance of Subjective Norms on Intentions to Perform Health Behaviors

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Trafimow & Finlay (1996) employed between- and within-subjects analyses to show that people, as well as behaviors, can be under attitudinal or normative control. Using both types of analyses, Finlay, Trafimow & Jones (1997) provided evidence that subjective norms are particularly important in the health domain. The current research compares health and domain general behaviors to show that people intend to perform health behaviors that have relatively large subjective norm beta weights more than those with smaller normative beta weights. Also, people whose behaviors are generally under normative control intend to perform more healthful behaviors than do people whose behaviors are generally under attitudinal control. These results were not found using domain-general behaviors.

Predicting behaviors is particularly important in the field of health psychology because health is greatly influenced by behavior. Behaviors can increase or decrease the likelihood of getting cancer, having a heart attack, being injured, and maintaining general health. Being able to predict behaviors that influence health can be useful in interventions that seek to reduce the likelihood of negative health consequences and increase the likelihood of positive consequences. These interventions not only improve the well-being of individuals, but also reduce the costs associated with the treatment of preventable health problems.

The theory of reasoned action (e.g., Ajzen, 1988; Ajzen & Fishbein, 1980; Fishbein, 1967, 1980; Fishbein & Ajzen, 1975; Triandis, 1980) and its variants have been successfully applied to the prediction of health behaviors. In short, the proximal determinant of behavior is intention to behave. Intention to behave is, in turn, determined by attitude and subjective norm. A simple and effective way to measure attitude is to ask how much an individual likes or dislikes performing the behavior (Finlay, Trafimow, & Jones, 1997; Trafimow & Finlay 1996, 1998; Ybarra & Trafimow, 1998). Similarly, subjective norm has been measured by asking how much a person's important others want the person to perform the behavior (Ajzen & Fishbein, 1980; Finlay et al., 1997; Fishbein & Ajzen, 1975; Trafimow & Finlay, 1996; Ybarra & Trafimow, 1998). By employing a multiple

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regression analysis, the attitudinal and normative beta weights are compared to
determine if the behavior is attitudinally or normatively controlled. Usually
(Finlay et al., 1997; Trafimow & Finlay, 1996), behavioral intentions are pre-
dicted more strongly by attitudes than by subjective norms (i.e., attitudes are usu-
ally associated with greater beta weights than are subjective norms). However, a
small proportion of behaviors (e.g., going into debt, having one’s teeth cleaned,
seat-belt use in dangerous driving situations, and condom use) have been
found to be under normative control (Stasson & Fishbein, 1990; Trafimow, 1994;

More recently, however, Trafimow and Finlay (1996) proposed that in addi-
tion to behaviors, people could also be classified as attitudinally or normatively
controlled (the issues of whether people or behaviors are under attitudinal or nor-
mative control are potentially statistically independent issues—see Michela,
1990; Trafimow & Finlay, 1998). Whether a person is considered attitudinally or
normatively controlled is determined by examining his or her intentions to per-
form a variety of behaviors for normative or attitudinal reasons. If a person’s
within-subject attitude–intention correlation is larger than the subjective-norm–
intention correlation, he or she would be considered to be generally under attitu-
dinal control (AC). If the reverse were true, the person would be considered to be
generally under normative control (NC; Trafimow & Finlay, 1996). Importantly,
behavioral intentions were found to be predicted as well, or better, by within-
subjects multiple correlations as by more traditional between-subjects multiple
correlations. Further, when Trafimow and Finlay examined only the people who
were generally under AC, they found that the importance of subjective norms on
the majority of behavioral intentions was negligible. Of course, this was not the
case for the normatively controlled subsample.

Similar results were also found in the health domain (Finlay et al., 1997).
Both between-subjects and within-subjects multiple correlations resulted in
excellent prediction of behavioral intentions from attitudes and subjective norms
(median correlations were .74 and .82 for between-subjects and within-subjects
analyses, respectively). Also, in accordance with the Trafimow and Finlay (1996)
study, a relatively small percentage (18%) of the participants was deemed to be
under NC. More generally, recent research (Finlay et al., 1997; Trafimow &
Finlay, 1996, 1998) also demonstrated the importance of distinguishing between
AC and NC for people across a range of behavior and for behaviors across a
range of people.

Finlay et al. (1997) also found some subjective-norm patterns that were
unique to the health domain. For instance, for the AC subsample, subjective
norms were more predictive than they were in the Trafimow and Finlay (1996)
study. Almost half of the behaviors continued to have a significant normative
component even after the NC people were removed from the sample. Most inter-
esting, however, are the differences between the two NC subsamples. In the
domain-general study (Trafimow & Finlay, 1996) the median attitude beta weight was larger than the median subjective-norm beta weight, even for the normative sample. However, the opposite was true in the health domain. That is, the median subjective-norm beta weight (.42) was larger than the median attitude beta weight (.31) for the normatively controlled subsample only using a health domain. Thus, subjective norms appear to be especially worthy of further consideration within the health domain.

In line with the idea that subjective norms may play a particularly important role in health-related behaviors, Terry and Hogg (1996) proposed that subjective norms may be especially important in predicting health-related behaviors because they are behaviors that people are confident of what they believe their most important others think. This may not be as true in other types of behaviors. Perhaps Joe may be relatively sure that his spouse thinks he should eat healthfully, but he may not be sure whether his spouse thinks he should pick an occupation that benefits society. Relatedly, Trafimow (1994) provided evidence that confidence in what important others think improves the prediction from subjective norms to intentions to use condoms.

The importance of subjective norms has also been directly applied in community interventions. Specifically, Fishbein and his colleagues (Fishbein, Middlestadt, & Trafimow, 1993; Fishbein, Trafimow, et al., 1993; Fishbein et al., 1995) provided evidence for the importance of subjective norms in predicting and determining condom use. Middlestadt et al. (1995) used this information to implement a successful public-health campaign.

Several potentially interesting questions arise from further considering the importance of subjective norms in health behaviors. For instance, are behaviors with a substantial normative component more likely to be performed than are behaviors with lower normative influence? If so, is this because the behavior has a substantial normative component or is it because the behavior is health related? The current study provides some tests for both of these questions by comparing domain-general intentions (from the Trafimow & Finlay, 1996, study) with new and older health-related behavior data (from the Finlay et al., 1997, study).

Further investigation of normatively controlled people in general and in the health domain is needed. That is, similar to the possibility that NC health behaviors may be more likely to be intended than AC health behaviors is the possibility that NC people may intend to perform more healthful behaviors than may AC people. If so, it may be that NC people intend to behave in more healthful ways, or it may be that they report intentions to perform all types of behaviors more than do AC people. By examining a variety of domain-general (provided by data from Finlay, Trafimow, & Villarreal, 1998; Trafimow & Finlay, 1996, 1998) and health behaviors, we can determine if NC people are simply people who tend to report greater intentions to perform behaviors in general, greater intentions to perform health behaviors, both, or neither.
In addition to these questions, a main interest is in the possible applied importance that subjective norms have on both health behaviors and people within the health domain. First, we explore the possibility that health behaviors with large normative components are more likely to be performed, using both older (Finlay et al., 1997) and newly collected data. To perform this analysis, an a priori beta weight was needed to compare behaviors with relatively larger versus smaller normative components. Because subjective norms typically have a much smaller influence on behavior than do attitudes, we arbitrarily chose to use a normative beta weight of .25 to distinguish between behaviors with a larger or smaller normative component. Second, we also analyze whether normatively controlled people tend to perform more healthful behaviors than do AC people.

Method

We collected data from 149 introductory psychology students (48 males, 82 females, and 19 who failed to indicate their gender), 55 of whom were Mexican American, 54 who were Anglo Americans, and 40 who declined to indicate their ethnicity. The questionnaires consisted of the same single-item attitude, subjective-norm, and behavioral-intention measures as were used in the Finlay et al. (1997) study in which participants indicated their responses on a 7-point scale. For example, one set of attitude, subjective-norm, and behavioral-intention items used was "I like/dislike to eat well-balanced meals," "Most others who are important to me think I should/should not eat well-balanced meals," and "I intend/do not intend to eat well-balanced meals," respectively. Other behavioral measures included illness-related behaviors (e.g., seeking assistance when ill, getting rest), preventive behaviors (e.g., dental hygiene, personal and environmental cleanliness), and reducing risk involved in recreational behaviors (e.g., moderation in alcohol consumption, wearing condoms).

Additional analyses were also performed using the Finlay et al. (1997, 1998) and the Trafimow and Finlay (1996, 1998) data sets. The Finlay et al. (1997) data set employed exactly the same questionnaire as the new data, and the items in both data sets were reverse-scored in the cases where greater intentions would indicate a choice to behave in an unhealthy manner. The Finlay et al. (1998) and Trafimow and Finlay (1996, 1998) data sets consisted of the same questionnaire format, but the behavioral items used in the current analyses were not specific to a single domain. They included behaviors such as visiting relatives, going into debt, attending church, and selecting occupations. It was impossible to reverse-score these items in such a way that they would always be consistent with what participants’ most important others would want because of their relatively lesser

\footnote{The .25 criterion is relatively stringent, given that the median beta weights for subjective norms for entire samples were .16 and .13 in the Finlay et al. (1997) and Trafimow and Finlay (1996) studies.}
socially sanctioned nature, compared to the health behaviors which are more clearly healthful or not healthful.

Results

Replication

The new data provided consistent results with the original health-behavior study (Finlay et al., 1997). The between-subjects regressions showed that the behavioral intentions were predicted well by attitudes and subjective norms together and separately, and the individual predictors were also similar to those in the original study (Table 1). In both cases, attitudes predicted intentions better than did subjective norms. As is the case with most of these studies, both data sets show that attitudes and subjective norms are relatively highly correlated (.44 and .58, respectively). In order to provide additional statistics for the relative importance of each component, the change in $R^2$ when subjective norms are removed from the variance accounted for by the entire regression equation and the change in $R^2$ when attitudes are removed from the variance accounted for by the entire regression equation are also included. Table 1 shows that these statistics and the beta weights of these equations are similar.

The within-subjects analyses, in which intentions are predicted from attitudes and subjective norms across all 32 health behaviors for each individual, also

3The typical correlation between attitudes and subjective norms spurs both mathematical and theoretical debates. Discussions of their relative independence and for maintaining the separate constructs were reviewed by Traimow (1998). Variance inflation analyses, a measure of multicollinearity, indicated only one clear instance in which variables might be considered too highly correlated to reflect accurate beta-weights. This occurs in one behavior in the normatively controlled subsample of the new data. This occurrence is relatively inconsequential to the statistics used because the statistics rely on medians.
replicated previous findings. Specifically, in the Finlay et al. (1997) study, the median variance accounted for by attitudes and subjective norms together was .82, and separately the variances were .77 and .62, respectively. In the current study, these numbers were .85, .80, and .66. Median beta weights for attitudes and subjective norms were very nearly identical: .62 and .26 in the original study, and .63 and .26 in the current study, respectively.

In addition, the current study found that only a slightly higher percentage of the individuals had larger subjective-norm—intention correlations than attitude—intention correlations (21%), compared to the original study (i.e., 18% were NC). Further, the two studies had similar correlational and regression statistics in both the NC and AC subsamples (Table 2).

**The Effect of Attitudinal or Normative Control on Behavioral Intentions**

To test if behaviors with a relatively strong normative component are intended more than are behaviors with a smaller normative component, the beta weights for each behavior were examined. There were 5 behaviors in the current health sample that had normative beta weights greater than .25, compared with 11 behaviors in the Finlay et al. (1997) study. Behaviors that met this criterion in both of the studies included “Have my teeth cleaned regularly,” “Avoid risky sexual behavior,” and “Keep my bathroom disinfected.” For each study, the items that met the criterion were combined into a single scale, and the mean was compared to the mean of those that did not meet the criterion. Both studies
<table>
<thead>
<tr>
<th>Health behaviors</th>
<th>$M_n$</th>
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<tr>
<td>Current data</td>
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<tr>
<td>Intentions</td>
<td>4.71</td>
<td>4.83</td>
<td>2.96*</td>
</tr>
<tr>
<td>Attitudes</td>
<td>4.66</td>
<td>4.48</td>
<td>3.93**</td>
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<tr>
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<td>4.74</td>
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<tr>
<td>Domain-general behaviors</td>
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<tr>
<td>Intentions</td>
<td>4.81</td>
<td>5.05</td>
<td>4.56**</td>
</tr>
<tr>
<td>Attitudes</td>
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<td>1.50</td>
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<tr>
<td>Subjective norms</td>
<td>4.97</td>
<td>4.89</td>
<td>2.10</td>
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Note. These means are based on a 7-point scale (0 to 6) on which a 3 indicates neutrality. They have been adjusted such that high numbers reflect more intention, more positive attitude, and more perceived pressure to perform the behaviors in question. $M_n$ refers to behaviors with subjective-norm beta weights greater than .25. $M_N$ refers to behaviors with normative beta weights less than .25. $^*p < .005$, $^{**}p < .001$.

showed that health behaviors with beta weights greater than .25 are significantly more likely to be intended than are those with lower normative beta weights (Table 3). Further, this pattern was unique to health behavioral intentions. That is, the means of attitudes and subjective norms tended not to be affected by whether behaviors were under AC or NC.4

One last set of between-subjects analyses was performed on a domain-general set of behaviors to examine the possibility that all behaviors, rather than just health behaviors, that meet the .25 normative beta-weight criterion are intended.

4In fact, the only significant difference that emerged was on the attitudinal components and was in the opposite direction, suggesting that behaviors with a normative beta weight of .25 are disliked more. However, these latter differences are unique to only the first of the two studies and are, most likely, theoretically meaningless (Table 3).
to be performed more often. Thus, the behaviors from the Trafimow and Finlay (1996) sample were analyzed in a similar fashion as described earlier. Contrary to this possibility, the opposite pattern was found for intentions and attitudes (Table 3). Specifically, domain-general behaviors with a subjective-norm beta weights lower than .25 received significantly more positive responses on the attitude measures and were intended more than were those with larger subjective-norm beta weights, although this latter finding was not significant. This is consistent with recent findings reported by Sheeran, Norman, and Orbell (1999) that attitudinally controlled domain-general intentions are intended more than are normatively controlled domain-general intentions.

The Effect of Attitudinally or Normatively Controlled Individuals on Behavioral Intentions

Given that people as well as behaviors can be under AC or NC, it is particularly interesting to compare AC and NC people to determine if intentions to perform health behaviors are affected. In the current data, we found that out of the 32 behavioral intention means, 24 showed that NC people intended to behave more healthfully; and of the 8 other behaviors, 3 showed identical means for both subsamples. A binomial test indicated that this difference (24 of 29 behaviors) was significant at the .001 level. More impressively, the Finlay et al. (1997) study showed that 31 of the 32 health behaviors were intended more by NC people than by AC people ($p < .001$).

NC people also perceived more pressure by their important others to perform the behaviors than did AC people in both of the data sets. Specifically, NC people tended to respond more extremely than did AC people in their judgments of the extent to which their most important others thought that they should perform the health behaviors in 21 of the 32 ($p = .11$) behaviors from the current data set, and 31 of the 32 behaviors in the Finlay et al. (1997) data set ($p < .001$). However, the responses to the attitudinal questions did not show discernible differences between the AC and NC subsamples.

Interestingly, this pattern appears to be particularly characteristic of the health domain. Specifically, we combined three sets of behaviors (Finlay et al., 1998; Trafimow & Finlay, 1996, 1998) to comprise a total of 111 domain-general behaviors (30 of which were replicated behaviors using a different sample of participants). Results showed that only 55 were intended to be performed more by normatively controlled participants than by attitudinally controlled participants ($p > .10$). Although caution must be used in interpreting these findings.\footnote{As mentioned earlier, it is difficult to know, a priori, what the normative influence is on domain-general behaviors. Consequently, we chose to examine a variety of behaviors to increase the validity of this analysis. Nevertheless, caution must be taken to avoid extrapolating more from these findings than what is concluded in the text.}
these results indicate that the tendency for normatively controlled people to intend to perform more healthful behaviors is not likely to be a result of a tendency to respond to all behavioral-intention questions in a more positive way, compared to attitudinally controlled people. Of course, comparing specific domains will lead to an even greater understanding of the differences between AC and NC people.

Discussion

The data can be summarized as follows. First, health behaviors with a large normative component were more likely to be intended than were health behaviors with a small normative component. That this is a finding peculiar to the health area is demonstrated by a failure to obtain the effect when domain-general behaviors were analyzed. Second, this effect also extends to people as well as behaviors. That is, NC people were more likely than were AC people to intend to perform healthful behaviors. Further, consistent with the previous finding, this effect was not obtained for domain-general behaviors. In sum, we obtained strong support for the importance of NC in intentions to perform health behaviors.

As in all studies, the present research has its limitations. For example, intentions rather than real behaviors were measured. It is possible that the obtained results would not replicate if real behaviors were measured. On the other hand, a great deal of literature, in an impressive variety of domains, suggests that intentions are highly correlated with real behaviors. Some examples of these are cooperating in a prisoner’s dilemma game \( r = .82; \) Ajzen, 1971), having an abortion \( r = .96; \) Smetana & Adler, 1980), using birth-control pills \( r = .85; \) Ajzen & Fishbein, 1980), breast-feeding versus bottle-feeding \( r = .82; \) Mansstead, Proffitt, & Smart, 1983), attending church during an Easter holiday \( r = .90; \) King, 1975), performing mental practice before a football game \( r = .81; \) Trafimow & Miller, 1996), and others (see Kraus, 1995; Sheppard, Hartwick, & Warshaw, 1988, for meta-analyses).

One might also consider a possible limitation concerning the replication part of this study. Our new data set was collected from the same geographical area and probably comprises very similar ethnic and gender proportions as in the original study. Although this may be beneficial for the purposes of performing a replication of the theory, it presents a limitation in applying the specific results to other populations. That is, it is possible (even likely) that data collected from other areas of the United States and other countries would result in different proportions of NC people and possibly show different behavioral-domain patterns. For instance, Trafimow and Finlay (1996) argue that the strength of the collective self is correlated with being normatively controlled. It may be that cultures characterized by relatively higher levels of collectivity may be much more likely to have
higher proportions of NC people. It is also likely that cultures differ in how they view health issues. Specifically, different cultures are likely to vary in whether they perform health-related behaviors for attitudinal or normative reasons.

The replication aspect of this study provides additional support for an interesting theoretical possibility. The current data produced results very similar to those of the Finlay et al. (1998) study; however, this was particularly true of the within- rather than the between-subjects analyses. Specifically, between-subjects analyses accounted for a median multiple $R^2$ of .74 and .68 (new data), compared to .82 and .85 (new data) for the within-subjects findings. These numbers support the possibility that knowing if a person is AC or NC may be superior in predicting behavior to knowing if the behavior is AC or NC. Further, Trafimow and Finlay (1998) showed a similar finding using domain-general behaviors. That is, the within-subjects analyses also resulted in greater median $R^2$s than did the between-subjects (across behaviors) analyses. However, we are not implying that the behavioral-based information is useless. The variance accounted for by attitudes and subjective norms in the between-subjects analyses is also impressive. As Middlestadt et al. (1995) demonstrated, this information can be particularly useful, given that one task of applied-health psychologists is to increase the performance of specific behaviors for entire populations.

The current research has interesting implications for intervention as well. Typically, interventions have been focused on changing mean levels of attitudes, subjective norms, or both (Ajzen, 1971; Middlestadt et al., 1995; Trafimow & Fishbein, 1994a, 1994b). Unfortunately, specific attitudes and subjective norms may be difficult to manipulate (see Eagly & Chaiken, 1993, for a review). The present findings suggest a possible solution. Specifically, one implication is that messages directed at increasing the importance of the normative component of health behaviors should increase their likelihood of being performed. For instance, advertising peer pressure and family concern for health may increase the normative component for the population in general and should be effective in increasing health-related behavior.

In addition, increasing the normative component may be equally effective. Instead of attempting to directly increase the importance of health-related subjective norms, Ybarra and Trafimow (1998) provided evidence that a more general method may produce a similar result. Specifically, these researchers found that priming the collective self significantly increased the size of the relationship between subjective norms and participants' intentions to use condoms. Consequently, increasing the cognitions associated with collectivism may also improve intentions to perform healthful behaviors.

The distinction between AC versus NC behaviors/people suggests another implication. For example, it may be relatively easy to manipulate subjective norms for NC people. More generally, different interventions may be more effective if directed at some types of people or behaviors than others.
There is also a more conceptual issue that should be considered. We demonstrated that for the health behaviors we considered, those with a strong normative component are more likely than are those with a weak normative component to be intended. However, this may not be true for all health behaviors. Perhaps our conception is truer for some categories of health behaviors than for others. This issue would not be difficult to investigate. A broad taxonomy of health behaviors could be created and the present study could be replicated with behaviors obtained from the taxonomy. Analyses could then be conducted not only across all of the health behaviors, but also within the health behaviors that are members of each category of the taxonomy. Thus, researchers could determine which health categories are most amenable to normative considerations, thereby leading to better interventions and the subsequent alleviation or prevention of human suffering.

In addition, it would be interesting to explore other health-predictive personality variables (e.g., risk-taking tendencies, locus of control, pessimism or negative affectivity, hostility) that might be correlated with being NC or AC. Also, given that NC people generally perform more healthful behaviors, further investigation of NC and AC people may provide us with evidence that at-risk populations are largely made up of AC people. If so, interventions that focus on what most important others want may be less influential for the people who are most likely to be at risk.

Clearly, because the behavioral domain and the type of person are both likely to be important in creating an effective intervention, additional research comparing specific domains that are likely to benefit from interventions would be useful. In an effort to provide such information, Finlay et al. (1998) compared a different set of health behaviors with exercise behaviors. Results from these domains suggest that the pattern of AC and NC health behaviors differs from the pattern of AC & NC people. NC people do not intend to perform more exercise-related behaviors, compared to AC people. Exploring the interaction between AC and NC people and behaviors is likely to be useful in specific health domains and in other behavioral domains where normative beliefs may be more or less salient.

References


