

Behavioral Intentions, Expectations and Willingness

Description and Theoretical Background

Most theories of health behavior share a belief that the single best predictor of an individual's behavior is simply his/her intention to engage in that behavior. Thus, virtually all health-behavior theories include *some version* of the construct of behavioral intention (BI) as a proximal antecedent to action. The most often cited of these theories is the **Theory of Reasoned Action** (TRA; Fishbein & Ajzen, 1975), which has BI as its focal antecedent. Together with its offshoot, the **Theory of Planned Behavior** (TPB; Ajzen, 1991), the TRA illustrates many of the issues surrounding the conceptualization and measurement of intentions and other proximal antecedents to health behavior.

The TRA is one of a group of psychosocial theories of human social behavior referred to collectively as *expectancy value* theories (Feather & Newton, 1982; Fishbein, 1963). The name reflects a *process* thought to precede all behaviors: Decisions to act or not act are the result of an assessment of the likelihood of specific outcomes associated with the act along with the subjective value assigned to those outcomes. When the assessment produces a positive evaluation, a decision is made (usually) to act. That decision is the BI, which is the only proximal antecedent to behavior in the TRA and TPB. Specific antecedents to BI in the TRA and TPB are subjective norms (what important others want one to do) and attitudes toward the behavior (e.g., one's affective reaction to performance of the behavior).

Definition. Intentions have been defined in the TRA/TPB as: the amount of effort one is willing to exert to attain a goal (Ajzen, 1991), "behavioral plans that...enable attainment of a behavioral goal" (Ajzen, 1996), or simply "proximal goals" (Bandura,

1997). The measures section presents examples of BI measures (guidelines for construction of these measures can be found on a TPB webpage; XX). In essence, **intentions can be conceived of as goal states** in the expectancy value tradition that are the result of a conscious process that takes time, requires some deliberation, and focuses on consequences (Loewenstein, Weber, Hsee, & Welch, 2001).

Predicting behavior. The TRA has done a very good job in predicting health behavior. In particular, meta-analyses have shown that intentions account for between 20% and 30% of the variance in health behaviors (Albarracin, Johnson, Fishbein, & Muellereile, 2001; Armitage & Conner, 2001; Conner & Sparks, 2005; Hagger, Chatzisarantis, & Biddle, 2002; Sheeran, 2002; Sheeran & Orbell, 1998).

Measurement Issues

Recently, Ajzen and Fishbein (2005) discussed factors that may affect the BI / behavior relation and, therefore, should be taken into account when constructing BI measures. First, is **aggregation**. As with most constructs, indices of BI are most reliable and have the highest predictive validity when they include multiple items. Thus, if the relevant behavior is diet, the criterion and the BI measures should both include different variations of the focal construct (e.g., eat fruits and vegetables, monitor fat intake, avoid sweets). Second is the principle of **compatibility**, which states that the BI and behavioral measures should “involve exactly the same action, target, context, and time.” (p. 26). Thus, a more global or abstract intention—“I intend to drive safely” may not accurately predict a specific behavior, such as wearing seat belts. Another factor is **commitment**. If the behavior (goal) is important to the individual, his/her expressed intention to do it should relate more strongly to its performance. Commitment and strength of intention are

likely to be correlated, however, (Rhodes & Matheson, 2005); so measuring commitment may be redundant with assessment of BI.

Although BI does have very good predictive validity, it is still the case that it doesn't explain 70% to 80% of the variance in health behavior, which raises the methodological question (with theoretical implications) of why? One factor has to do with *stability*.

Conner, Sheeran, Norman, and Armitage (2000) reported that health screening (Study 1) and maintaining a low fat diet (Study 2) were better predicted by intentions when those intentions were relatively stable across a one-year period of time (cf. Cooke & Sheeran, 2004). Related to this issue, another obvious factor is the *time lag* between measurement of BI and behavior. Although it varies by behavior (and age of the respondent), generally speaking, the BI – behavior relation tends to diminish when the measurement gap between the two exceeds a few months (Sheeran & Orbell, 1998). Another complicating factor is *emotion*. When asked to report intention to engage in a particular behavior—get a mammogram, for example, or a colonoscopy—one might not consider (or fully appreciate) the level of anxiety that, in classic approach-avoidance terms, might inhibit behavior *at the time of execution*. The same applies to interference that may come from the ingestion of substances at the time of performance (Ajzen & Fishbein, 2005).

Type of Behavior as a Moderator of the Intention – Behavior Relation

Perhaps the most important moderator of the BI / behavior relation is the nature of the behavior involved. In particular, four dimensions of behavior influence the predictive power of the BI construct: a) perceived behavioral control, b) complexity, c) social desirability, and d) social involvement.

Perceived behavioral control. Recognizing that perceived ability to perform a particular behavior, or achieve a certain goal may influence whether the behavior actually occurs, Ajzen (1991) developed the TPB, which adds a self-efficacy component to the TRA, called perceived behavioral control (see Measures). When perceived and actual control are high, BI should relate directly to outcome. When the behavior is difficult, however—sticking to a diet, for example, or avoiding fatty foods—intentions may be high, but ability may be a step or two lower. Meta-analyses have suggested that this additional construct adds about 2% on average to the percentage of variance accounted for in behavior (Armitage & Conner, 2001). That amount does vary considerably, however, depending on the actual difficulty involved—up to a high of 12% for behaviors such as quitting smoking, which are very difficult (Godin, Valois, Lepage, & Desharnais, 1992).

Complexity. Multiple-act criteria, i.e., behaviors that require a series of actions to complete (e.g. fecal occult blood test or FOBT), are more difficult to predict than are less complex behaviors. One reason for this is that people tend to overestimate the likelihood that they will successfully complete all of the actions in the series, when failure to complete any one of them stops the behavior. Thus, intentions don't do as good a job (relatively speaking) in predicting complex behaviors like screening for cancer. For example, Godin and Kok (1996) and McEachan and Conner (2005) both found that BI explained about 16% of the variance in screening behavior, meaningfully lower than researchers typically observe for other (less complex) behaviors..

Social desirability. Ajzen and Fishbein (2005) refer to the issue of poor BI “performance” as “**literal inconsistency**” – the tendency for people to not do what they

said they were going to do. This is especially likely when the behavior is very high or very low in social desirability. Most instances of poor BI prediction involve the former: reports of intentions to do appropriate behaviors that don't actually result in action. For example, Sheeran (2002) reported that people who say they do not intend to engage in cancer screening very seldom do (what he calls "behavioral inertia"); however, a significant percentage of those who give the socially desirable response—"I intend to screen"--do not follow through. More generally, Sheeran found across a variety of health behaviors, that the median percentage of people who said they did not intend to "do the right thing" and did not was 93%, whereas about half of those who said they had good intentions never acted on those intentions. Presumably, the same problem exists, in reverse, for undesirable behaviors—low reported BI, but performance nonetheless. A recent meta-analysis (Webb & Sheeran, in press) addressed this issue, by looking at health risk as well as health promotion behaviors.

Social involvement. Webb and Sheeran conducted a meta-analysis of the BI / health behavior relation, examining only those studies (N = 47) that included longitudinal measures of BI and behavior, and *involved an intervention* intended to change the former (BI), in an effort to then change the latter. They concluded that changes in health intentions had a smaller impact on changes in health behavior (i.e., Δ BI / Δ behavior relations were weaker) when: a) the gap between measurement of BI and behavior was relatively long (greater than the median of 11.5 weeks), b) the behavior included a significant habitual component (e.g., seat belt use), c) perceived and actual control were low, and d) the behaviors involved health risk (as opposed to health promotion) and were performed in "social contexts" (e.g., smoking, condom use). The authors concluded that

intentional control over health behavior is more limited than previously thought. They also recommend that future behavior change efforts give greater consideration to non-intentional routes to health behavior that include health images or prototypes (see Gibbons & Gerrard, 1997) and “automatic” (i.e., situationally-controlled) processes.

Other Proximal Antecedents: Implementation Intentions, Behavioral Expectation, and Behavioral Willingness

In an effort to reduce the “literal inconsistency” problem (the inconsistency between what people say and what they do) and therefore increase the observed relation between proximal antecedents and behavior, researchers have explored other types of proximal measures.

Implementation Intentions

One way to increase the predictive power of intentions is to make them more concrete; i.e., add items regarding the specific ways in which the behavior may be performed, or the goal attained. In other words, ask about *when* the behavior will be performed, as well as *where* and *how* it will take place, what Gollwitzer (1999) calls implementation intentions (see examples in Measures). Adding these specifics has been shown to increase the likelihood that intentions to engage in behaviors, such as maintaining a healthy diet (Verplanken & Faes, 1999), or engaging in breast self-examination (Orbell & Sheeran, 2000) will predict those behaviors—in part because it increases the likelihood that the behaviors will actually be performed (for a general review of implementation intention research, see Gollwitzer & Sheeran, in press). Forming these types of intentions is likely to be most important for health behaviors that are complex, and clearly linked with situational cues or prompts.

Behavioral Expectations

Intentions are defined as plans or goals. People oftentimes fall short of achieving their goals, however, which raises the question of whether respondents take this into account when stating their intentions. Assuming they often do not, Warshaw and Davis (1985) created the construct of behavioral expectation (BE), which they define as an estimate, or subjective probability, that a behavior will actually be performed (see Measures).

Whereas BI is a plan, BE is a prediction. Theoretically, when answering BE items, people will take into account additional influential factors—circumstances, past behavior, anticipated change in intentions or circumstances—that might not enter into expressions of goals. Thus, BE should work better for behaviors that are undesirable and/or difficult; and there is some evidence of this (e.g., speeding; cf. Parker et al., 1992). Meta-analyses, however, have produced mixed support. Some have shown a slight, but significant superiority of BE for difficult or socially undesirable behaviors (Courneya & McAuley, 1994; Shepperd et al., 1988); others report no difference (Sheeran & Orbell, 1998; Webb & Sheeran, in press). One reason for this is that people are not very good at estimating the impact of influential factors that are presumably considered when forming expectations: peer pressure and past behavior, for example; nor are they very good at estimating or anticipating changes in circumstances or in intentions. Thus, BE and BI often end up looking very similar (Conner & Sparks, 1996).

Many researchers have chosen to use BI and BE interchangeably. A meta-analysis of 154 TPB studies (Armitage & Conner, 2001) found that only 20 used straight BI measures; 40 used BE measures, and 88 used a combination of the two. Moreover, Davis and Warshaw (1992) present some evidence to suggest that people often report their

expectations when answering BI questions. Clearly, there is a conceptual difference between behavioral goals and behavioral estimations—any smoker who has tried and failed to quit would attest to this. Similarly, asking a repeat DWI offender if s/he expects to drink and drive vs. whether s/he has a plan (or a goal) to drink and drive will result in very different responses. Empirically, however, the relative predictive validity of BE vs. BI measures for different types of behavior has not been clearly established (Webb & Sheeran, in press); more research is needed.

Behavioral Willingness

When asked, most adolescents say they have no intention of engaging in behaviors that put their health at risk; and yet, when given the opportunity, many of them do (Gibbons, Gerrard, Reimer, & Pomery, in press). This is one reason why intentions are less effective at predicting adolescent behavior (Albarracin et al., 2001; Sheeran & Orbell, 1998), or behavior that involves health risk (Webb & Sheeran, in press). In an effort to improve this type of prediction, Gibbons and Gerrard (1997; Gibbons, Gerrard, & Lane, 2003; in press) developed the prototype / willingness (prototype) model of health behavior. The basic contention of the model is that much health *risk* behavior (binge drinking, risky sex), especially among adolescents, is not intentional, but rather a reaction to social circumstances.

To capture this unintentional, reactive component of risky behavior, Gibbons and Gerrard created the construct of **behavioral willingness (BW)**, which they define as **an openness to risk opportunity**—what an individual would be willing to do under some circumstances. To assess BW (see Measures), risk-conducive situations are described, along with the qualifier that no assumptions are being made about whether the respondent

would ever be in (or seek out) these types of situations. The intent is to avoid implied internal attribution or “blame.” After describing the situation, a series of possible responses is described, which increase in level of risk. The aggregated total provides an assessment of what kinds of risky behavior the respondent is capable of performing—if *they encounter the opportunity*.

BW is highly correlated with BI, but still consistently explains additional amounts of variance in behavior—from 2% to > 10% (see Gibbons et al., 2003, for reviews). Moreover, as might be expected, BW is usually a better predictor than BI of health risk behavior for adolescents (Gerrard, Gibbons, Stock, Dykstra, & Houlihan, 2005; Gibbons, Gerrard, Ouellette, & Burzette, 1998; Gibbons et al., 2004); then, with age and experience, BE and BI eventually exceed BW (Pomery, Gibbons, Gerrard, & Reis-Bergan, 2005). Nonetheless, there are certain risky behaviors that, for many people remain “opportunistic” throughout life—adultery, for example, or risky sex, drunk driving, or recreational drug use.

Behavioral Intention vs. Behavioral Expectation vs. Behavioral Willingness

Two important factors when deciding which measures to use in health research would be the type of behavior being examined and the age of the population being assessed. For *health-promoting* behaviors, such as those related to diet and nutrition, medical regimen, sun protection, exercise, etc., standard BI measures should work well, especially if accompanied by implementation intentions—where and when to exercise, which diet to follow, or which sunscreen to use. If the behaviors are complex and control is an issue, then these BI items should be accompanied by measures of perceived control. By the same token, if there is reason to believe that commitment to the intention or goal is

tenuous, or if the behavior has a clear social desirability element associated with it, or, again, if perceived (or actual) control is low, such as with weight loss or smoking cessation, then BE measures may do better than BI (it's not likely they will do worse). Finally, much health behavior research concerns health risk, which often has a significant "social reaction" component (Webb & Sheeran, in press)," especially for adolescents. Performance of these behaviors often depends on the situation. The best way to assess these kinds of behaviors would be to use BW as well as BE measures, and, if possible, measures of intention to not engage in the behavior.

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MEASURES

Behavioral Intention (BI)

Behavior	Item	Reference
Breast Self-Examination (BSE)	I intend to carry out BSE in the next month. (7-pt scale from <i>likely</i> to <i>unlikely</i>)	Orbell, Hodgkins, & Sheeran (1997)
Exercise	I plan to exercise regularly over the next 2 weeks. (7-pt scale from <i>strongly disagree</i> to <i>strongly agree</i>) I intend to exercise regularly over the next 2 weeks. (7-pt scale from <i>strongly disagree</i> to <i>strongly agree</i>)	Rhodes & Matheson (2005)
Exercise	I will try to walk on a treadmill for at least 30 minutes each day in the forthcoming month. (7-pt scale from <i>definitely true</i> to <i>definitely false</i>) I plan to walk on a treadmill for at least 30 minutes each day in the forthcoming month. (7-pt scale from <i>strongly disagree</i> to <i>strongly agree</i>)	Ajzen (2002)

Behavioral Expectation (BE)

Behavior	Item	Reference
Breast Self-Examination (BSE)	How likely or unlikely is it that you will carry out BSE in the next month? (7-pt scale from <i>likely</i> to <i>unlikely</i>)	Orbell, Hodgkins, & Sheeran (1997)
Exercise	I expect to exercise regularly over the next 2 weeks. (7-pt scale from <i>strongly disagree</i> to <i>strongly agree</i>)	Rhodes & Matheson (2005)
Everyday behaviors	All things considered, <i>how likely</i> is it that you <i>actually will perform</i> the given behavior some time <i>next weekend</i> : Eat only nourishing foods...take a walk...smoke some cigarettes...take vitamins (9-pt scales from <i>extremely unlikely</i> to <i>extremely likely</i>)	Warshaw & Davis (1985)

Perceived Behavioral Control (PBC)

Behavior	Item	Reference
Breast Self-Examination (BSE)	For me to carry out BSE in the next 30 days is (7-pt scale from <i>easy</i> to <i>difficult</i>) How confident are you that you can carry out BSE in the next 30 days? (7-pt scale from <i>confident</i> to <i>unconfident</i>) How much control do you have over whether you carry out BSE in the next 30 days? (7-pt scale from <i>under my control</i> to <i>not under my control</i>)	Orbell, Hodgkins, & Sheeran (1997)
Exercise	For me to walk on a treadmill for at least 30 minutes each day in the forthcoming month would be (7-pt scale from <i>impossible</i> to <i>possible</i>) How much control do you believe you have over walking on a treadmill for at least 30 minutes each day in the forthcoming month? (7-pt scale from <i>no control</i> to <i>complete control</i>) It is mostly up to me whether or not I walk	Ajzen (2002)

	on a treadmill for at least 30 minutes each day in the forthcoming month. (7-pt scale from <i>strongly agree</i> to <i>strongly disagree</i>)	

Implementation Intention

Behavior	Item	Reference
Breast Self-Examination (BSE)	You are more likely to carry out your intention to perform BSE if you make a decision about where and when you will do so. Many women find it most convenient to perform BSE at the start of the morning or last thing at night, in the shower or bath, or while they are getting dressed in their bedroom or bathroom. Others like to do it in bed before they go to sleep or prior to getting up. Decide now where and when you will perform BSE in the next month and make a commitment to do so.	Orbell, Hodgkins, & Sheeran (1997)

Behavioral Willingness (BW)

Behavior	Item	Reference
Instructions	From time to time we will ask you to imagine yourself in certain types of situations. We are not suggesting that you would be in these situations. However, we would like you to please think about these situations and how <u>you</u> would respond in them. Then answer <u>each</u> of the questions that follow. We will call these “suppose” questions.	Gibbons, Gerrard, Cleveland, Wills, & Brody (2004); Gibbons, Gerrard, Ouellette, & Burzette (1998)
Unprotected sex with a casual partner	Suppose you were at a party and met a man/woman for the first time. You think that he/she is very attractive. At the end of the evening, you go to his/her apartment with him/her. Neither of you has used nor has available a contraceptive of any kind. In those circumstances, how willing would you be to do each of the following? (7-pt scales from <i>not at all willing</i> to <i>very willing</i>) Stay at his/her apartment and have sex. Stay at his/her apartment and have oral sex. Stay at his/her apartment, but don't have sex.	Gibbons, Gerrard, Blanton, & Russell (1998)

	Get his/her phone number and go home alone.	
Drug use	<p>Suppose you were with some of friends at a party. There are some drugs available. How willing would you be to do each of the following? (7-pt scales from <i>not at all willing</i> to <i>very willing</i>)</p> <p>Use some drugs, but not enough to get high. Use enough of the drugs to get high. Leave the party (because of the drugs). Stay at the party but not use the drugs.</p>	Gibbons, Gerrard, Cleveland, Wills, & Brody (2004)