

The Rocky Road From Attitudes to Behaviors: Charting the Goal Systemic Course of Actions

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The issue of attitude-behavior relations is revisited in light of recent work on motivation and the psychology of goals. It is suggested that for object-attitudes to drive a specific behavior, a chain of contingencies must be realized: Liking must be transmuted into wanting, wanting must evolve into a goal, the goal must be momentarily dominant, and the specific behavior must be chosen as means of goal pursuit. Our model thus specifies a set of mediating processes that transpire between attitudes and behavior. Prior theories of attitude-behavior relations are examined from the present perspective, and its conceptual and empirical implications are noted.

Keywords: attitude, want, goal, motivation, behavior

If they do not know . . . what you want, they cannot know what you plan to do next.

—Lord Baelish in *Game of Thrones* (Cogman & MacLaren, 2014)

Gordon Allport's (1935) oft-cited statement that "the concept of attitude . . . is the most distinctive and indispensable concept in contemporary American social psychology" (p. 798) has reverberated in the proliferation of attitude research over the years. Indeed, the scientific study of attitudes has been the most popular and voluminous topic of research in all of social psychology (for reviews see, e.g., Ajzen & Fishbein, 1975; Albarracín, Johnson, & Zanna, 2005; Eagly & Chaiken, 1993; Krosnick & Petty, 1995; McGuire, 1968; Petty & Wegener, 1998, among others). A search for the term "attitude" on PSYCIInfo yields a staggering 390,308 results, as compared with the results for terms such as "cognition"

(132,490 results), "motivation" (124,454 results), and "decision" (155,889 results).

Arguably, the immense popularity of the attitude construct owes in part to the fact that attitudes were assumed to predict behavior. Allport (1929) viewed "an attitude (as) a disposition to act" (p. 221, parentheses added). Other authors, too, emphasized the presumptive link between attitudes and behavior. Thus, Cohen (1960) stated that "attitudes are always seen as precursors of behavior, as determinants of how a person will actually behave in his daily affairs" (pp. 137–138). Similarly, Petty and Wegener (1998) affirmed that "attitudes (are) important because of the fundamental role that individuals' attitudes . . . play in the critical choices people make regarding their own health and security as well as those of their families, friends and nations" (p. 3230). If psychology's overarching "goal is the prediction and control of behavior" (Watson, 1913, p. 158), it follows that the attitude-behavior link is of crucial importance hence understanding it poses a significant challenge for psychological science.

Accordingly, substantial work in social psychology was devoted to questions about the kinds of attitudes that promote behavior and the conditions that facilitate the attitude behavior link (e.g., Ajzen, 1985, 2012, 2014; Ajzen & Fishbein, 1980; Fabrigar, Petty, Smith, & Crites, 2006; Fazio, 1990, 1995; Fishbein & Ajzen, 1975; Krosnick & Petty, 1995; Regan & Fazio, 1977; Sivacek & Crano, 1982, among others).

The search for moderators of the attitude behavior relation was likely sparked by early accumulation of findings that not all attitudes actually prompt behavior. Well known in this regard is Wicker's (1969) review, which found "little evidence to support the postulated existence of stable, underlying attitudes within the individual which influence both his verbal expressions and his actions" (p. 75). Wicker concluded, somewhat pessimistically, that

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“it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviors than that attitudes will be closely related to actions” (p. 65) and he challenged researchers to look for “factors . . . which are consistently *better predictors* of overt behavior than attitudes” (Wicker, 1969, p. 75, italics added).

The gauntlet thrown down by Wicker (1969) was heartily picked up by social psychologists; however, rather than relinquishing the concept of attitudes as predictors of behavior and seeking “better predictors” elsewhere, investigators proceeded to elaborate influential conceptual frameworks and to generate empirical findings concerning moderating conditions required for the attitude-behavior relationship to be manifest.

Roughly, much of the work on the attitude-behavior relation was carried out under two major research programs centered on the notions of (a) *attitude strength*, and (b) *behavior focus*, respectively. The attitude strength program (see Krosnick & Petty, 1995, for a comprehensive review) adopts the premise that only sufficiently strong attitudes drive behavior, where attitude strength is attested by indices such as accessibility, extremity, confidence, and elaborative basis, among others. The behavior focus program (Ajzen, 1985, 2012, 2014; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) maintains that general object attitudes are unlikely to be related to behavior (a notion they discuss under their *compatibility principle*, Fishbein & Ajzen, 2010, pp. 258–259), and that behavioral prediction is better accomplished from attitudes toward the behavior itself.

Both research programs are reviewed and extensively discussed in subsequent sections of this article. First, however, we present a novel perspective on the attitude behavior relation anchored in the psychology of goals. Broadly, we propose that attitudes toward objects, even if strong, or toward behavior, even if highly positive, are insufficient in and of themselves to incite action.¹ Instead, human behavior is driven by *goals*. The latter notion seems to be common knowledge in fact. People pervasively respond to the question of *why* they performed a past behavior, or why they intend to perform a future behavior by pointing to a state of affairs (a goal) that their behavior was or is meant to achieve (cf. Gollwitzer, 1999). Why does one run every evening? To be fit (defining fitness as the goal). Why does one study till the wee hours of the morning? To pass an exam.

To say that behavior is goal driven is not meant to suggest that attitudes are *irrelevant* to behavior. To be sure, attitudes are involved in the enactment of behavior by contributing to *goal formation*. However, object attitudes alone do not produce goals. For behavior to occur, a conjunction of several things of uncertain likelihood must take place, a perfect storm of sorts.

In a gist, attitudes toward objects contribute to the evaluative part of goals: An attitude (*liking*)² for an object that one does not presently possess must translate into a desire for it or a “want” of sufficient magnitude (Berridge, 2004; Kruglanski, Chernikova, Rosenzweig, & Köpetz, 2014) and then be conjoined to a perceived attainability (i.e., reasonable expectancy) of obtaining the object of one’s desire; beyond a certain threshold the desirability-attainability compound transforms into a *goal* whose attainment may be enabled by a behavioral *means*. Even this might not suffice for behavior to take place, however. For a goal might be overridden by other, more pressing objectives activated in the situation.³ A goal must dominate those alternative concerns for behavior in its service to take place. In a sense then, the goal construct is the

proverbial “elephant in the room,” the missing link whose explicit recognition promises to cast a new light upon the attitude-behavior enigma.

Our analysis is much indebted to prior theories and empirical findings on the attitude-behavior consistency, and it integrates them with recent work on the psychology of goals (e.g., Bargh & Ferguson, 2000; Fishbach & Ferguson, 2007; Kruglanski, 1996; Kruglanski et al., 2002, 2012, 2014; Morsella, Bargh, & Gollwitzer, 2009). In essence, we flesh out from a goal theoretic perspective what may have been only implicit in our predecessors’ ideas. However, the proposed explication is not a mere rehash of existing concepts; instead, it identifies exceptions to prior formulations and reveals phenomena that have been heretofore obscured.

To foreshadow what is to come, we begin by presenting our conceptual perspective on the attitude behavior relation. We then review major prior analyses of this relation and reinterpret them in goal theoretic terms. A closing discussion draws the implications of our analysis for conceptual and empirical matters concerning the concept of attitudes and its ultimate relevance to behavior.

A Goal Systemic Analysis of the Attitude-Behavior Relation

Defining the “Attitude Concept”

Although various definitions of the term attitude have been offered,⁴ the one that has stuck and has managed to command wide consensus views attitude as a positive or negative *evaluation* of some object (e.g., Ajzen & Fishbein, 1975; Bem, 1970; Cacioppo, Harkins, & Petty, 1981; Eagly & Chaiken, 1993; Fazio, 2007; Petty, Wegener, & Fabrigar, 1997; Thurstone, 1931). In what follows, therefore, we too adopt this widely accepted view of attitudes as evaluations.

We also are assuming that an attitude thus defined is essentially a cognitive construct with several distinctive properties often discussed under the common rubric of *attitude strength* (Krosnick & Petty, 1995): An attitude is a *judgment* that a given object or state of affairs falls somewhere on the continuum between *good* and *bad*, or *likable* versus *unlikable*. It is possible also to conceptualize attitudes as located on two separate continua one of goodness the other of badness (Armitage & Conner, 2000). The specific location on the continuum (or continua) defines the property of *attitude extremity* (Krosnick & Petty, 1995). As a cognitive construct, too,

¹ Other writers made this same point. Specifically, Calder and Ross (1973, p. 7), expressed doubt that “the mere fact that one has an attitude would produce behavior in and of itself.” Echoing these writers’ sentiment, Fazio (1995, p. 271) expressed reluctance “to ascribe any energizing value to attitudes.”

² By “liking” we mean a positive evaluation rather than merely an affective response.

³ For instance, an individual may abandon the goal of showing up at an important meeting, if the goal of caring for his or her sick child was activated. Again, it is not only the positive attitude toward the child’s health but attainability of improving the child’s health through one’s staying at home that drives the behavior. If the child was at a far away land, so that one could do little for its benefit, one might have attended the meeting as planned originally.

⁴ Such as Allport’s (1929) notion that “an attitude is a disposition to act,” (p. 221) or the tripartite definition of attitude as containing cognitive, affective and behavioral components (Rosenberg & Hovland, 1960).

one's *degree of confidence* in an attitude (or evaluation) may vary depending on the kind of evidence one has for the attitudinal belief in question. For instance if one's own epistemic authority in a given domain (Kruglanski et al., 2005) was high, one could infer one's attitude from one's own experiences or gut feelings toward the entity in question (Fazio & Zanna, 1978). If evaluations of an object on separate goodness and badness dimensions were disparate (e.g., the object was judged as highly positive but also as highly negative) one could speak of *attitude ambivalence* (Armitage & Conner, 2000). Too, as cognitive constructs attitudes may vary in their *accessibility*, that is, in the readiness to which object evaluations (or liking for the object) come to mind upon exposure to the object (Fazio, 1990; Higgins, 1996).

Properties of the "Goal" Concept

We view the goal concept as a cognitive construct, a mental representation whose contents are of motivational significance (Kruglanski, 1996, p. 599). These contents define a goal as "a desirable⁵ future state of affairs one intends to attain through action" (Kruglanski, 1996, p. 600). This dynamic definition pertains to goals of all types and levels of importance or of generality. It describes such grand life objectives as getting an advanced degree or becoming a concert violinist, and also such minute goals as crossing a busy street, picking an hors d'oeuvre from a tray, or avoiding a conversation with a stranger. In all these cases, a desirable state perceived as attainable (a coveted academic or artistic attainment, a safe arrival at a desired location, consumption of a tasty snack, preserving one's privacy) fosters action aimed at its attainment. Beyond its dynamic contents, goal's cognitive properties as a mental representation render it subject to the same processes and principles that govern all cognitive constructs, including the processes of inference, knowledge activation, and unconscious impact as discussed subsequently.

Desirability and attainability. As already noted, for something to be adopted as a goal it must be recognized as *desirable* as well as *attainable* given one's resources. In other words, to adopt a given goal one needs to *infer* from appropriate evidence that the state of affairs in question is sufficiently desirable and attainable.

The desirability (related to value) and attainability (related to expectancy) components of goals are immanent in major theoretical analyses of motivation. Atkinson (1964) for instance noted that "the strength of the tendency to act in a certain way depends upon the strength of expectancy that the act will be followed by a given consequence (or goal) and the value of that consequence (or goal) to the individual" (p. 274). More recently, Shah and Higgins (1997) stated that "an increase in either attainment expectancy (i.e., attainability) or *attainment value* (i.e., desirability) produces an increase in goal commitment" (p. 447). Similarly, Forster, Liberman, and Friedman (2007) argued that goal priming effects (reflecting goal magnitude) are proportional to the product of the goal's expectancy and its value (desirability) and described empirical evidence supportive of this notion.

Empirical Study 1: Lay perceptions of the goal concept. Notions of desirability and attainability are presupposed also by lay conceptions of the goal concept. We asked 104 American adult participants on Mechanical Turk to evaluate a scenario generated by a computer program designed to write stories. The scenario described the following situation:

Taylor is a freshman in college. He recently learned about a 1-year scholarship at his college. The winner of the scholarship receives \$0/\$10,000. Each applicant has a 0%/25% chance of winning the scholarship.

In a between-participants design, each of our subjects viewed one of the four versions of this vignette, and responded to the questions: (a) Would it make sense for Taylor to set a goal to get this scholarship? (yes/no); and (b) Would it be rational for Taylor to set a goal to get this scholarship? (yes/no).

Results of this study are clear (see Figure 1). Almost all participants responded that it would not be rational, and would not make sense, for the protagonist to set a goal in the *zero desirability/zero attainability*, *zero desirability/high attainability*, and *high desirability/zero attainability* conditions. In contrast, almost all participants in the *high desirability/high attainability* condition answered that it would be rational, and would make sense, for the protagonist to set a goal in these circumstances. A χ^2 test comparing whether the four conditions were different from results that could be expected by chance was highly significant ($p < .001$). These findings, presented in Figure 1, attest that lay participants view some degree of desirability and some (above zero) degree attainability as essential to goal setting.

Accessibility. As cognitive structures, goals vary in their (momentary or chronic) accessibility (Higgins, 1996) and can be activated or primed by relevant environmental stimuli such as its semantic associates (Bargh & Ferguson, 2000; Fishbach & Ferguson, 2007; Morsella et al., 2009) or their means of attainment (Shah & Kruglanski, 2003). It has been generally assumed, that for it to drive behavior, a previously formed goal needs to be activated (i.e., to be either chronically or momentarily accessible). We assume, for example, that activating individuals' liking toward objects via the *measurement* of attitude accessibility (as described in Fazio, 1990) may lead to quick goal formation, for instance where the objects' perceived attainability was high and no competing and more dominant goals were active in the situation.

Unconscious impact. Decades of recent research have yielded consistent evidence that activated goals can drive behavior below the level of actors' conscious awareness. Indeed, studies show that unconsciously activated goals can lead to the same cognitive and behavioral outcomes as conscious goals (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Chartrand & Bargh, 1996). For example, Bargh et al. (2001), found in a classic study that subliminally priming people with a goal to cooperate led them to cooperate more in a resource-management game; moreover, this effect was not mediated by consciously reported intentions (for similar findings, see Hassin, Bargh, & Zimerman, 2009; Kleiman & Hassin, 2011; Milyavsky, Hassin, & Schul, 2012).

Evidence that goal priming studies actually activate goals rather than semantic concepts or attitudes derives from research (Bargh et al., 2001) indicating that priming of a goal (e.g., achievement) unlike semantic priming (e.g., priming of a trait "achiever") *intensifies rather than decays with time*, which is the case for mere concepts or attitudes (Kunda, Davies, Adams, & Spencer, 2002). In addition, Bargh et al. (2001) showed that people who were subliminally primed (vs. not primed) with an automatic goal to achieve exhibited *greater task persistence in the face of obstacles*,

⁵ Beyond a given threshold of desirability (Kruglanski et al., 2014).

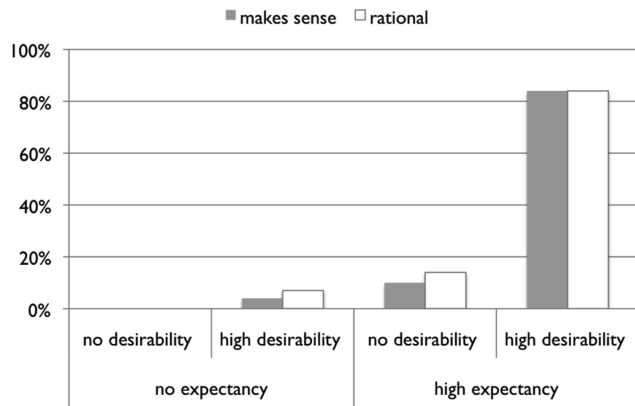


Figure 1. Perception of goals as a function of expectancy and desirability.

and *higher resumption* after distraction, features uniquely characteristic of goal-driven activities (e.g., Lewin, 1935; Tolman, 1932).

In summary, we are assuming that behavior in general is goal driven, and that this pertains both to deliberative behaviors whose identification and choice may require considerable energy, and to spontaneous behaviors that follow automatically from goal activation. For instance, one might sit closer to or further from another person because one *wanted* (and had the *goal*, however implicit) to initiate contact with that individual, or avoid contact as the case may be. Such a goal would be constructed on the basis of relative attitude (e.g., for contact vs. no contact) with that person, but only where alternative links in the attitude-to-behavior chain were also present. Thus, attitude toward contact would not determine behavioral distancing where distancing was not seen as an attainable option (as in a tightly packed metro train), nor where an alternative dominant goal (e.g., cooperation with that person) was activated. In what follows, we discuss in greater detail the several links that mediate the attitude to behavior relation.

The “Rocky Road” Model of Attitude-Behavior Relations

On Liking and Wanting

Liking is not wanting. As noted earlier, attitude refers to positive evaluation or “liking” of an object or a state. Liking for an object is neither a sufficient nor a necessary condition for wanting it. It is not sufficient because, for instance, *one may like what one possesses already* in which case liking for that object may not produce wanting. Moreover, liking for something in the absolute is not a *necessary* condition for wanting it, because one may *prefer an undesirable state* (that one generally dislikes) over an *even less undesirable state* (the lesser evil as it were). For instance, a person may strive to leave one’s homeland and immigrate to a foreign country even though one may not like in particular being there, yet staying behind might be dangerous for oneself and one’s family. As elaborated subsequently, it is relative liking for the one state versus another that induces wanting, which then may translate into goal formation.

A similar argument was made by Bagozzi (1992) in an early article. As he aptly noted,

In and of themselves, evaluative appraisals such as those found in attitudes do not imply motivational commitments. In contrast, the existence of a desire, in the presence of a belief that one can act, is a sufficient motivator to activate an intention and does not require a positive evaluation. A person can want or desire to do something even though it is unappealing, unpleasant, or in some other way evaluated negatively (e.g., Fred wants to go to his father’s funeral although he is distressed at the prospect of doing so). Likewise, one can want or desire not to do something even though it is evaluated positively (e.g., Gail desires not to exercise today although she regards favorably the consequences of doing so). Of course, desires often coincide with evaluations, but it is important to recognize that these reactions are unique responses with potentially different antecedents and consequences. (p. 184)

Finally, Berridge (2004) recently proposed in the same vein that

“Liking” by itself is simply a triggered affective state—there is no object of desire or incentive target, and no motivation for reward. It is the process of incentive salience attribution [wanting] that makes a specific associated stimulus or action the object of desire, and that tags a specific behavior as the rewarded response. (p. 195)

Furthermore: “‘Liking’ without ‘wanting’ can be produced, and so can ‘wanting’ without ‘liking’” (Berridge, 2004, p. 194). For instance, manipulation of the mesolimbic dopamine systems was shown to change *wanting* for a reward without changing *liking* for it. Unlike liking, wanting is particularly influenced by dopamine neurotransmission; dopamine manipulations in the nucleus accumbens have been shown to change wanting the reward without having an effect on liking for it (Berridge & Robinson, 2003). Accordingly:

“‘Liking’ without ‘wanting’ happens after brain manipulations that cause mesolimbic dopamine neurotransmission to be suppressed. For example, disruption of mesolimbic dopamine systems . . . dramatically reduces ‘wanting’ to eat a tasty reward, but does not reduce affective facial expressions of ‘liking’ for the same reward” (Berridge, 2004, p. 194).

Wanting as relative liking. To be sure, liking is not irrelevant to wanting. In fact, research by Aarts, Custers, and colleagues (Aarts, Custers, & Holland, 2007; Custers & Aarts, 2005, 2007) demonstrated that associating positive or negative affect with states such as “socializing” contributed to them becoming goals (i.e., conditions that one *wants* to attain or avoid) that drive behavior. However, how does liking translate into wanting? We discuss this issue next.

Specifically, “wanting” refers to greater (*approach*) or lesser (*avoidance*) liking for a possible *future state* relative to the *current state*. That is, wanting appears when the anticipated assessment (like or dislike) for the future state is either more or less positive than that of the current state. Simply put, wanting arises from a *discrepancy* between liking for the present versus the future state. The motivating properties of discrepancy are highlighted in major psychological theories of motivation (cf., Carver & Scheier, 1982, 1998; Custers & Aarts, 2005, 2007; Higgins, 1987; Miller, Galanter, & Pribram, 1960; Oettingen, Pak, & Schnetter, 2001; Wiener, 1948).

The discrepancy concept is also immanent in the lay understanding of desire, and is pervasively represented in everyday parlance. Questions like “Would you *like* some coffee,” “Would you *like* to play tennis,” are tantamount to asking “Do you *want* coffee?” Do you *want* [to play] tennis?” They inquire into one’s desire for those future states (having coffee, playing tennis) and imply a possible *discrepancy* between liking for them versus liking of their absence.⁶

We finally assume that a discrepancy in liking between a present and a future state needs to reach above a certain threshold of magnitude to translate into wanting. Minute discrepancies in liking, say, slightly lesser liking for sleeping in versus exercising at the gym may not necessarily result in positively wanting to do the latter.

Empirical Study 2: Bridging a discrepancy removes a desire.

If discrepancy (beyond a certain magnitude) induces a desire, eliminating the discrepancy should remove the desire. Generically, the latter case represents satiation (e.g., Karsten, 1928) a state in which the gap is bridged between what one desired and what one had already; thus, eliminating wanting while keeping liking intact.

To demonstrate this phenomenon empirically, we administered surveys to two groups of participants ($N = 53$), university students at a major state university: those who were about to eat lunch at the student union, and those who had just eaten lunch. We asked participants to name the main food item they were about to eat (or had just eaten), how much they wanted it, and how much they liked it.⁷ We found that although participants’ liking remained stable, as reflected in similar ratings both before ($M = 5.96$) and after eating ($M = 5.49$; $p > .95$), participants’ wanting was significantly higher before eating ($M = 5.51$) than after eating ($M = 4.73$; interaction $p = .01$; see Figure 2). In other words, removing the discrepancy between the dislike of hunger and the enjoyment of (liking for) its satisfaction, removed the desire for food while leaving intact the attitude toward (liking for) the food.

Two types of discrepancy. Two separate types of motivating discrepancy may be distinguished, namely those related to *promotion* and of *prevention* orientations (Higgins, 2012). In the case of promotion, the probability of wanting, $p(W)$, varies as a function of the degree to which one’s relative liking for some *future* state of affairs L_F exceeds that of one’s liking for the *present* state L_P . In the case of prevention, $p(W)$ varies as a function of the degree to which the present state L_P is liked better than some impending⁸ future state L_F . In Higgins’ (2012) theory, prevention also de-

scribes the case where the present state represents a negative (i.e., disliked) departure from some, better liked, status quo. For instance, dissonance theorists (e.g., Aronson, 1968; Festinger, 1957) depict a situation where the performance of counterattitudinal behavior creates a disliked state of dissonance and introduces the goal of dissonance reduction, which in turn is served by the means of attitude change.

Stated formally, let *Relative Promotive Liking* (RL_{PROM}) $\sim f(L_F > L_P)$, and let *Relative Preventive Liking* (RL_{PREV}) $\sim f(L_P > L_F)$, then probabilities of promotive Wanting, $p(W_{PROM})$, and of preventive Wanting, $p(W_{PREV})$, respectively, could be expressed simply as

$$p(W_{PROM}) \sim (RL_{PROM}) \quad (1)$$

$$p(W_{PREV}) \sim (RL_{PREV}) \quad (2)$$

Of interest too, even though the promotion and prevention *wants* differ in regard to the valence of their desired states (i.e., 1 and 0, respectively), their motivational salience appears to be similar. In support of that notion, Reynolds and Berridge (2008) demonstrated that desired and fearful environments evoke similar brain activity in the nucleus accumbens.

Wanting, goal setting, and acting. Major motivational theories imply that an existing discrepancy suffices to engender behavior aimed at its removal (e.g., Carver & Scheier, 1982, 1998; Miller et al., 1960; Powers, 1973; Wiener, 1948). In this vein, Carver and Scheier (2011) discuss a “discrepancy-reducing feedback loop . . . (whereby) if there is a discrepancy between the (present and an intended state), the discrepancy is countered by subsequent action” (p. 4, parentheses added).

We assume, however, that *wanting* in and of itself is not tantamount to *goal setting*, hence it may not necessarily engender a goal driven action. One may want the weather to be nice during one’s vacation, wish the stock market to be bullish, or desire that a parent’s operation will turn out well, without any of these defining one’s goal. As noted earlier, apart from *desirability* of appreciable enough magnitude, the object of one’s desire must possess *attainability* through one’s actions (Kruglanski, 1996; Kruglanski et al., 2014). Attainability through one’s action contributes to *expectancy* that one can reach the desired state and a sufficiently high expectancy may result in goal formation (Oettingen et al., 2001). On the other hand, a lack of perceived attainability through one’s own

⁶ A special case of this is represented by a discrepancy between one’s actual and desired attitude (DeMarree, Wheeler, Briñol, & Petty, 2014). Such a discrepancy may contribute to the formation of a goal to remove the discrepancy by replacing the actual by the desired attitude. In such an instance, the actual attitude is less likely to serve as a basis for goal formation. Indeed, DeMarree et al., 2014 find that where the discrepancy between actual and desired attitudes is large the actual attitude is less likely to predict behavior.

⁷ The liking measure consisted of an averaged response to five highly correlated questions referring to the main food item participants were about to eat (or had just eaten): (a) *How good is it?* (b) *How tasty is it?* (c) *How beneficial is it?* (d) *How pleasant is it?* (e) *How much do you like it?* Want was measured with the question: *How much do you want to eat it right now?* Answers were recorded with 7-point Likert scales anchored appropriately at the ends.

⁸ In the case of prevention the negative future state should be perceived as having an above threshold likelihood of occurring, otherwise no wanting would occur. For instance, one may dislike getting wet, but not want to carry an umbrella unless there is a high threat of rain.

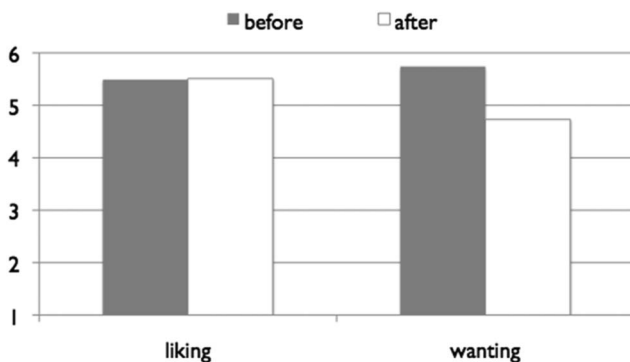


Figure 2. Liking and wanting of the meal.

activities may result in the delegation of goal attainment to other sources. Relevant to this point is research by Kay, Gaucher, Napier, Callan, and Laurin (2008) showing that in the absence of perceived control over outcomes, that is, of goals' attainability via one's own actions, individuals tended to "outsource" the fulfillment of their wants to external agency such as God or the government.

Granting sufficient degrees of desirability and attainability, a goal may be formulated (Kruglanski et al., 2014) but even that need not result in the initiation of (goal driven) behavior. First, as already noted, a goal needs to be accessed or activated from memory at a given moment (Bargh, 1990; Bargh et al., 2001; Fishbach & Ferguson, 2007; Stroebe, van Koningsbruggen, Papias, & Aarts, 2013). A dormant goal that is not of current concern is unlikely to promote action (Eitam & Higgins, 2010). Second, a goal needs to be sufficiently *dominant* in a given context, so that it is not overridden by other, more pressing concerns. Thus, we assume that goals differ in their importance to the individual and in case of goal conflict the more important goal takes precedence over the less important one. A person on the way to a job interview might fail to show up at the designated venue on learning that his or her spouse fell ill, that her/his house caught fire, or that her or his child went missing. One's goals may be ordered according to their hierarchy of importance to the individual (Kenrick, Griskevicius, Neuberg, & Schaller, 2010; Kruglanski & Kopetz, 2010). For instance, evolutionary (deep) goals such as survival or safety may normally trump self-presentation, as when one drops the hot dish from the oven while bringing it to the dinner guests. It is also true, however, that in some circumstances a generally less important goal may assert its dominance over a generally more important goal. For instance, whereas normally *survival* may take precedence over assertion of one's *social identity*, when one's group is severely humiliated the individual may be prepared to risk life and limb to redress the harm (Kruglanski, Belanger, et al., 2013; Pyszczynski, Sullivan, & Greenberg, 2015).

In other words, where a relative liking (RL) for a given state of affairs is situationally activated, a want may be created that overrides other, less salient, concerns. In this vein, Custers and Aarts (2005, 2007) demonstrated that priming affect (and hence RL) associated with a given condition increases the *dominance* of the correspondent *goal*, prompting relevant goal driven behaviors. Similarly, Pessiglione et al. (2007) found that participants exerted greater behavioral effort with a subliminal pound versus penny reward cue on a given trial. Additionally, Shah, Friedman, and Kruglanski (2002) showed that situationally induced commitment to a focal goal (that renders it dominant) fosters "forgetting all else," that is, induces the inhibition of other contemporaneous objectives (see also Huang & Bargh, 2014).

Means choice. Finally, even if a goal were dominant in a given situation this does not mean that a *specific* goal relevant behavior would be necessarily pursued. A behavior constitutes a *means to a goal*, and there might exist other accessible means that might be preferred by an actor in given circumstances. This raises the question of criteria whereby a means to a goal is selected. Given that an individual was able to carry out the activity that the means entails, two essential criteria determine means selection, namely those of (a) *instrumentality* and (b) *supplementarity*. The instrumentality criterion refers to the principle that a means is selected as a positive function of its perceived likelihood (behav-

ioral expectancy) of goal attainment (e.g., Labroo & Kim, 2009). The supplementarity criterion refers to the principle that, all else being equal, a means that promises to confer additional value beyond the specific focal goal, would be selected over one that confers lesser supplementary value. Evidence for the supplementarity principle comes from research on multifinality (for review of relevant findings see Kruglanski, Kopetz et al., 2013) demonstrating that a means that uniquely serves several different objectives is preferred over means that serves fewer objectives. A special case of supplementarity arises where the behavior that serves an ulterior end is additionally an end in itself. For instance, one may view tennis as a means to the goal of fitness but also enjoy tennis for its own sake, and so forth.

In a gist, then, attitudes seem to be quite remote from specific behaviors, and in order for them to produce behavior several "bridges" must be crossed. First, the attitude, or relative liking needs to engender wanting. Second, the wanting (desirability) needs to be conjoined to expected *attainability*, that is, the sense that one would be able to fulfill one's desire through one's actions. Lacking attainability, a want alone would not produce behavior. Third, the desirability or attainability compound would need to be of a sufficient magnitude to produce goal commitment. Fourth, the goal would need to be currently activated; fifth, that goal would need to be dominant in the situation rather than being overridden by alternative objectives. Sixth, for a given *behavior* to be carried out in specific circumstances it would need to be chosen as the preferred means to the goal, resulting in the formation of a specific *implementation intention* (Gollwitzer, 1999). These notions are schematically represented in Figure 3 that depicts "*a centralized self-regulatory function that coordinates multiple goal pursuit*" (Fishbach, 2014, p. 143).

In this depiction, attitudes constitute components of the *Relative Liking* terms, whether of the promotive or preventive variety (i.e., RL_{PROM} and RL_{PREV}). Beyond some threshold of magnitude, these translate into the Want (W) ingredients of several currently active goals, each of which incorporates in addition the essential, *attainability*, components (A). The goals are processed and compared via the central self-regulatory function, and as a result, a given goal is accorded dominance, becoming the *focal goal* in the situation. That goal may be associated with several behavioral means of which the most appropriate (i.e., the most apparently effective, parsimonious, or multifinal) is selected for implementation.⁹ As with goal selection, means selection and the formation of implementation intentions (Gollwitzer, 1999) is carried out via a central self-regulatory process whose extent may depend on the individual's mental resources.

According to the present theory then, the presence of attitude behavior consistency in a given domain is contingent on the fulfillment of several critical conditions. Specifically, a chain of events needs to occur, each link of which is necessary for the attitude in question to prompt a specific behavior. To state it

⁹ Thus, we assume Relative Liking to be a causal antecedent of Wanting, Wanting, and Attainability to be the causal antecedents of goal formation, and goal dominance to be a causal antecedent of behavioral (i.e., means) choice. No order of precedence is assumed to characterize the Want versus Attainability relation, however. That is, an individual might be cognizant of the *attainability* of a given state of affairs either before or after she or he was cognizant of its *desirability*.

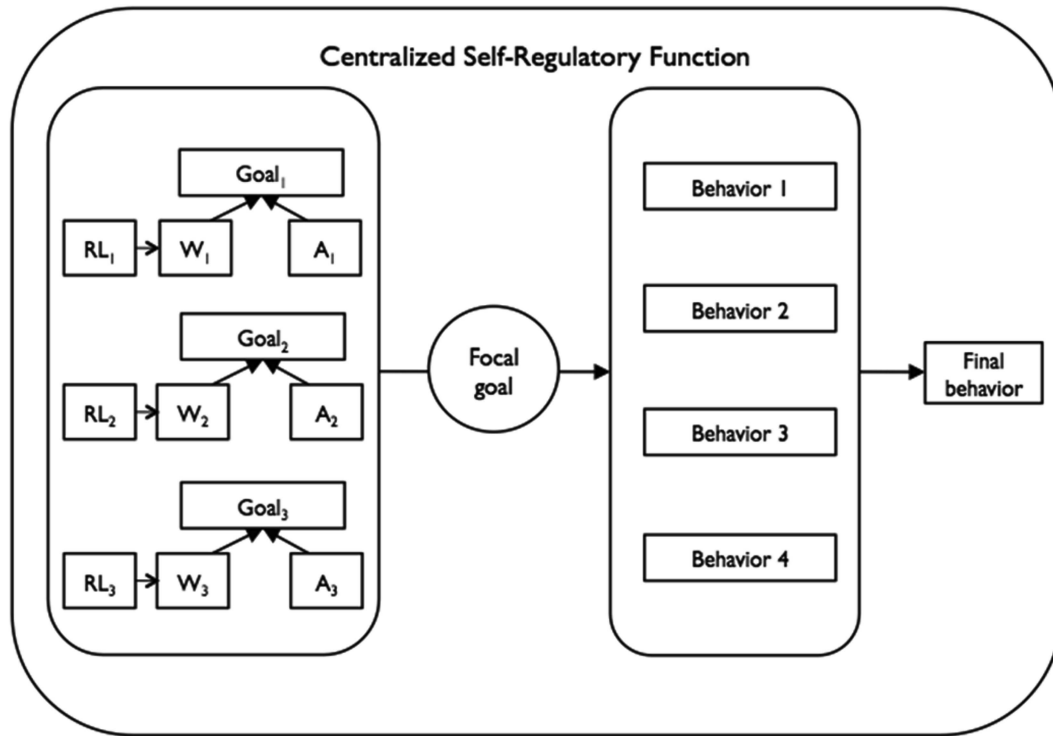


Figure 3. Centralized self-regulatory function.

formally, the conditional probability of a specific behavior (b_x) given an attitude L (toward an object or a state of affairs), $p(b_x/RL)$ can be expressed as function of the concatenation of several conditional probabilities, namely (a) the probability of *wanting* given the attitude or *liking* in question $p(W/RL)$, (b) the probability of *goal formation* given a state of *wanting*, $p(G/W)$, (c) the probability of the specific goal being *focal* (dominant) given the *set of currently active goals*, $p(G_F/G_{set})$, and (d) the probability of the *specific behavior* (b_x) being selected as a means to the focal goal out of the *set of currently accessible means* to that end, $p(b_x/M_{set})$. These relations are expressed in Equation 3.

$$p(b_x/RL) \sim f [p(W/RL) \times p(G/W) \times p(G_F/G_{set}) \times p(b_x/M_{set})] \quad (3)$$

Addressing the Attitude Behavior Issue: A Tale of Two Approaches

In the sections that follow we examine the two major research paradigms on attitude-behavior consistency and consider their relation to the present model. As noted earlier, these are the (a) *attitude strength*, and (b) *behavior focus* research programs. The first of these approaches explores the thesis that attitudes relate to behavior as function of their (variously defined) *strength* (cf. Krosnick & Petty, 1995). The second submits that *general attitudes toward objects* are unlikely to relate to behavior, and that a more effective strategy is to focus on attitudes toward the *behavior* itself (Ajzen, 1985, 2012; Ajzen & Fishbein, 1975; Fishbein & Ajzen, 2010).

As will be seen, both approaches differ in several major respects from the present theoretical perspective. For one, they continue to highlight the attitude construct as a major predictor of behavior. In contrast, we assign that role to goals and to perceived goal-means relations. Second, both traditional paradigms focus on attitudes *in the absolute*, that is, on liking for the object as such or liking for the behavior in itself; in contrast our model emphasizes the notion of *relative liking* and views the discrepancy between present and future states as crucial. Third, the traditional approaches neglect the *chain of contingencies* that span the chasm between an attitude and a behavior. In contrast, the present “Rocky Road” model views the sequence of contingent transformations from attitudes to wants, to goals, and ultimately to behavioral means as fundamental to understanding how human behavior unfolds.

The Attitude Strength Paradigm

Following Converse’s (1970) oft-cited observation that some voters’ responses to attitude scales are unstable (reflecting the so called “nonattitudes”), a great deal research was devoted to the concept of *attitude strength* and the idea that only sufficiently strong attitudes drive behavior. Attitude strength, defined as “the extent to which attitudes manifest the qualities of durability and impactfulness,” is an umbrella term encompassing a panoply of constructs (Krosnick & Petty, 1995, p. 3). The main strength-related constructs to have received empirical attention are *attitude extremity*, *direct experience*, *accessibility*, *certainty*, *ambivalence*, *importance*, *knowledge*, *intensity*, *interest*, *latitudes of rejection* and *noncommitment*, and *affective-cognitive consistency* (Kros-

nick, Boninger, Chuang, Berent, & Carnot, 1993; Krosnick & Petty, 1995). Considerable research has supported the claims that these indices of attitude strength are positively related to behavior. Examples include studies on attitude accessibility (Fazio, Chen, McDonel, & Sherman, 1982; Fazio, Powell, & Williams, 1989; Fazio & Williams, 1986), certainty (Davidson, Yantis, Norwood, & Montano, 1985; Sample & Warland, 1973), extremity (Fazio & Zanna, 1978; Petersen & Dutton, 1975), direct experience (Fazio & Zanna, 1978; Schlegel & DiTecco, 1982), affective-cognitive consistency (Norman, 1975; Schlegel & DiTecco, 1982), knowledge (Davidson et al., 1985; Fabrigar et al., 2006; Kallgren & Wood, 1986), latitudes of noncommitment (Sherif, Kelly, Rodgers, Sarup, & Tittler, 1973), importance (Farc & Sagarin, 2009; Jaccard & Becker, 1985; Schuman & Presser, 1981), vested interest (Sivacek & Crano, 1982), and ambivalence (Armitage & Conner, 2000; DeMarree et al., 2014).

From the present perspective, measures of attitude strength are *qualifiers* of the basic *liking* concept. That is, one's liking may be based on direct experience, and may be more or less accessible, extreme, confident, and so forth. The stronger the liking in some sense (of a hoped-for future state, or dislike of an impending future state relative to the present state) the greater the RL_{PROM} or RL_{PREV} and thus the more intense the desire (Want) to approach the future state or avoid it as the case may be.

The important point is, however, that no matter how strong the attitude in any of the above senses, it would fail to drive behavior if any of the terms of Equation 3 above went missing. According to the present model, then, though attitude strength at some above-threshold magnitude is *necessary* to engender wanting, it is *insufficient* for that purpose if not discrepant enough from liking for the present state—and even more so if, for instance, the future state was deemed unattainable, or the goal based on the wanting was overridden by another objective.

Indeed, a close inspection of each of the many attitude strength studies demonstrating its relation to behavior inevitably reveals unarticulated goals lurking in the background. Without those goals, and their situational dominance over other possible concerns the behavior in question is highly unlikely to have taken place. Let us consider some examples.

Attitudes based on direct experience. Fazio and colleagues (e.g., Fazio et al., 1982; Fazio, Zanna, & Cooper, 1978; Regan & Fazio, 1977) identified *direct personal experience* with an object as an important moderator of the attitude-behavior consistency. Indeed, experimental evidence gathered by the authors suggests that individuals who acquired their attitudes through direct experience with the attitude objects behave (toward those objects) more consistently with those attitudes than persons whose experience with the objects was indirect.

For example, in a study by Regan and Fazio (1977), participants were given five pages of puzzle problems and asked to work through them (in the direct experience condition) or were presented the same puzzles without having to complete them (in the indirect experience condition). Afterward, participants' attitudes toward the puzzle problems were measured, and they were given an opportunity to work on any problems they wished in a 15-min "free-play" session (where the behavioral measure was taken). Regan and Fazio (1977) found that participants who formed attitudes toward the puzzles through direct experience behaved more consistently with their attitudes (i.e., spent more time playing with

the puzzles they had evaluated positively, and less time with ones they evaluated less positively) compared with participants who formed their attitudes through indirect experience.

From the present perspective, it is likely that in the Regan and Fazio (1977) study, and other research of this type, participants' attitudes toward the attitude objects were indeed stronger (e.g., more intense or stable)¹⁰ and that this contributed to a greater sense of *wanting* to engage or to avoid engaging with the objects in question. Moreover, participants' sense of *attainability* of success may well have differed in the direct and indirect experience conditions affecting *goal formation*. Finally, in the free-play period of this study, *working on some problem* appears to have been the overriding goal in the situation whose pursuit was enabled by the available puzzles, hence promoting engagement. According to the present analysis, if any of these additional elements was missing, for example, if participants were tired of (or satiated with) puzzle solving, or if a different, more important goal was introduced into the situation, direct experience would be unlikely to promote behavior in those circumstances.

In brief then, a confident, stable attitude (one that might derive from direct experience) defines a *liking* component that often (though not invariably) may result in a desire (wanting); in turn, wanting might give rise to goal formation and the goal could drive a perceived behavioral means to its attainment. In that sense, direct experience could be indeed relevant to the attitude-behavior relationship. As we have seen, however, beyond liking, however strong or stable, several additional conditions would need to be met; a number of further "ducks" would need to be "in a row" (i.e., wanting, goal formation, means selection) for an experience-based attitude to actually eventuate in a behavior.

Accessibility. Fazio's early work on direct-experience (Fazio et al., 1978, 1982; Regan & Fazio, 1977) evolved into a more elaborate framework, namely the MODE model that accords a major role to the construct of *attitude accessibility* (alluded to already in the authors' earlier work, cf., Fazio et al., 1982). The MODE model focuses on a distinction between two general classes of attitude-to-behavior processes—*spontaneous* versus *deliberative*—and considers *Motivation* and *Opportunity* as the major determinants of which of the two is likely to operate.

In the *spontaneous* process, attitudes are automatically activated from memory upon the individual's encounter with the attitude objects. The attitude influences how the object is construed—either directly (i.e., affecting the object's immediate appraisal) or indirectly (as when it biases perceptions of the object's particular qualities). In contrast, the *deliberative* process is characterized by weighing the costs and benefits of a particular action. The *deliberative* process is effortful and an individual must be motivated to engage in it as well as to have the opportunity (i.e., the time and the resources) to do so. Fazio (1990) characterizes the *spontaneous* process as relatively "theory driven" or top-down, in that the behavior is assumed to follow from activated (attitudinal) constructs. By contrast, the *deliberative* process is assumed to be "data driven" in that the behavior is assumed to be determined by a relatively laborious consideration of situationally present features.

¹⁰ For example, because participants trusted their own epistemic authority or gut feelings concerning their liking or dislike toward the experienced objects.

In general, the MODE model treats motivation and opportunity as conditions necessary to counteract the “mindless” influence of automatically activated attitudes. In this vein, Fazio and Olson (2014) suggest that an “individual must be motivated to engage in the effortful analysis” (p. 3), that is, to actively deliberate about how to behave rather than allowing for automatically activated attitudes to guide behavior. They further state that

One might be motivated to gauge the appropriateness, or even counter the influence, of an automatically activated attitude. That motivation might stem from an enhanced desire for accuracy . . . a sense of accountability . . . a concern with social desirability . . . or . . . motivations to control prejudiced reactions. (Fazio & Olson, 2014, p. 3)

From the present perspective, both the spontaneous and the deliberative cases are governed by the same attitude to behavior process elaborated herein (see Equation 3). One difference between them is that that in the spontaneous case, previously formed attitudes are activated from memory whereas in the deliberative case attitudes are constructed from an elaborative consideration of relevant information (i.e., concerning costs and benefits of given states of affairs). Another difference between them is that production of “spontaneous,” or “automatic” behavior does not require much cognitive capacity or energetic resources whereas production of deliberative behavior does require these (cf. Kruglanski et al., 2012). More important, from the present perspective, however, regardless of whether activated from memory or constructed de novo, or whether requiring considerable or meager resources, the relative liking or disliking of objects or states must morph into *wanting* and wanting must morph into goal formation before it may impel behavior.

Early evidence that automatically accessible behaviors *can* drive behavior comes from research by Fazio et al. (1989). In this study, the authors first asked participants to rate their liking toward 100 products and measured their response latencies. Then they presented participants with a subset of 10 products and allowed them to choose five of them as gifts. Their findings showed that latencies of liking scores predicted whether a product would be chosen as well as the order in which it was chosen. In other words, for positive liking scores the faster were the liking responses toward a product, the more likely the participants were to choose it; for negative liking scores, the opposite was the case—the faster the (dis)liking responses, the less likely the participants were to choose the product in question.

Again, accessibility of liking may attest to strength of attitudes toward the products and relative liking (to having the product vs. lacking it) should well translate into a degree of *wanting* the products in question. Furthermore, *attainability* of those products was well nigh assured by the experimental procedures setting the conditions for wanting to evolve into goal formation. Finally, as no alternative goals appeared paramount in this experimental context, the goal driven behavior (choice of the more liked products) was fairly certain to appear. Had the products been made unattainable, however, or had the liking-wanting link been severed (e.g., by satiation) accessible attitudes should be less likely to predict behavior.

Empirical Study 3: Attainability moderates accessibility effects on attitude-behavior relations. We carried out an empirical study to test the idea that accessibility effects on attitude

behavior relations are moderated by the degree to which the actor’s goal is *attainable* through the behavior.

Ninety-four students of “La Sapienza” University of Rome (65.9% female, mean age = 23.50, $SD = 4.63$) took part in the study. Participants completed all tasks on a computer with Inquisit version 3. Data from four participants who made inconsistent responses were not included in the analyses. Note that when data from these participants were included in the analyses, results did not change.

Attitude accessibility and valence. Participants were presented with names of 16 film genres (e.g., thriller, drama, action, etc.) and were instructed to indicate whether they liked or disliked the genre. Reaction time (RT) was measured; in the analyses a logarithmic transformation was applied to this data. This represented the measure of *attitude accessibility*; lower RTs indicated *higher* accessibility. Participants were then presented with the names of the same genres and were asked to indicate their liking on a 1–7 scale; this represented the measure of *attitude valence*.

Desirability and attainability. Participants were then presented with a series of math problems; these problems were pretested to ensure that they were aversive, but not overwhelmingly aversive. Participants were then presented with a series of two randomly ordered statements that tapped their preferred choice between watching a relatively popular film genre (Thriller), or to continue solving math problems. Participants indicated their preference for each choice on a scale of 1–7. The manipulated likelihood of being assigned to either watch a film or continue solving math problems depended on the experimental condition to which participants were assigned.

In the *high attainability* condition ($n = 30$), participants were presented with the following information: (a) “If you choose to watch a film from the genre THRILLER, you will have a 70% chance of being assigned to watch the video and a 30% chance of doing more math” (b) “If you choose to do the math task, you have a 100% chance of being assigned to it.”

In the *low attainability* condition ($n = 33$), participants were presented with the following information: (a) “If you choose to watch a film from the genre THRILLER, you will have a 30% chance of being assigned to watch the video and a 70% chance of doing more math” (b) “If you choose to do the math task, you have a 100% chance of being assigned to it.”

In the third condition (*control*; $n = 31$), participants were presented with options to watch a film from the Thriller genre, or to continue to solve math problems. Attainability information was not mentioned in this condition.

Results. Data from participants who made inconsistent responses on the attitude accessibility task (i.e., like or dislike of film genres) and the attitude valence task were removed (e.g., if a participant indicated like of a particular genre in the accessibility task, then rated it below the midpoint of the attitude valence task, see Fazio et al., 1989, for a similar procedure). Data from three participants in the low attainability and one participant in the control condition were removed for these reasons.

Preference manipulation check. To assess if participants found Thrillers to be preferable to the math task, we assessed the desirability for each across each condition. As expected, mean desirability for thriller was higher (4.57) than mean desirability for math (2.64), $F(1, 87) = 50.28$; $p < .0001$.

Control condition. Data from the control condition ($n = 30$) were used to assess the two-way Accessibility \times Valence interaction. This sample did not include data from one participant who made an inconsistent response. Main effect of Attitude accessibility and attitude valence and their interaction were entered as predictors in this analysis. Both accessibility and valence attitude variables were standardized and the interaction term was based on the standardized scores. Results from the control condition are presented on Table 1.

Valence and accessibility: Main effects. Only the Valence main effect was significant. Specifically, more positive attitudes toward Thriller were associated with greater preference for this film genre.

Two-way interaction. The Valence \times Accessibility interaction was significant and in the expected direction. Simple slope analysis show that the positive effect of attitude valence on preference for Thriller was strongest at *high* accessibility ($b = 1.66$, $t = 3.34$, $p = .002$); preference was highest at high valence and high accessibility. The effect of attitude valence on preference at *low* accessibility was very weak ($b = -.14$, $t = -.27$, $p = .791$; see Figure 4). These findings conceptually replicate the classic Fazio et al. (1989) study.

Experimental condition. To test the attitude Accessibility \times Attitude Valence \times Attainability interaction, data from the high and low attainability conditions were analyzed jointly ($n = 60$). This sample did not include data from three participants (all in the low attainability condition) who made an inconsistent response. Main effects of Attitude Accessibility (standardized score), Attitude Valence (standardized score), and a contrast code for the Attainability condition (-1 low attainability and 1 high attainability), as well as the two and three-way interactions between variables were entered as predictors in the analysis. Results from the experimental condition are presented in Table 2.

Attitude valence, accessibility, and attainability: Main effects. Only the main effect for attitude valence was significant in that more positive attitudes were associated with higher desire.

Two-way interactions. The Attitude Valence \times Accessibility interaction was significant and in the expected direction; the effect of attitude valence on preference was strongest at high accessibility. The attitude Valence \times Attainability was also significant; Valence had a stronger effect on preference in the high Attainability condition.

Three-way interaction. More important, the critical three-way interaction between Valence, Accessibility, and Attainability was significant ($p = .009$). Decomposing this effect, it is found that the two-way Attitude Valence \times Accessibility interaction was significant ($b = -1.11$, $t = -3.51$, $p = .0009$) in the *high attainability*

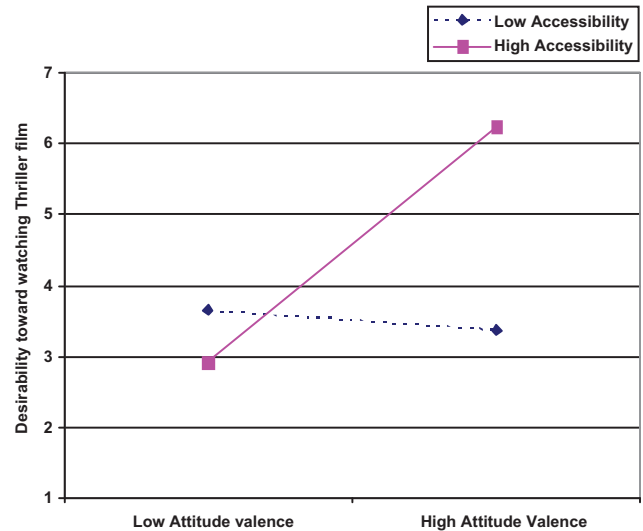


Figure 4. Desirability of watching a thriller film as a function of attitude valence and accessibility (Control condition). See the online article for the color version of this figure.

condition, but not in the *low attainability* condition ($b = -.08$, $t = -.27$, $p = .787$; see Figures 5 and 6.)

Specifically, simple slope analyses show that in the *high attainability* condition, attitude valence was positively and significantly ($b = 2.63$, $t = 4.33$, $p = .0001$) associated with preference for watching a thriller at *high attitude accessibility*. Preference for thriller was particularly low when valence was low and accessibility high. There was no significant effect of attitude valence, however, under low attitude accessibility ($b = .41$, $t = .98$, $p = .331$).

In summary, findings reported above support the present analysis whereby accessible attitudes' relation to behavior depends on a goal's attainability by the behavior. In the present study, accessible attitudes were translated into behavioral preferences only where attainability was relatively high and not where it was low.

Full fledged MODE model. The full-fledged MODE model was tested in a number of previous studies. Hofmann and Friese (2008), for instance, investigated the effects of dietary constraint and resource capacity, manipulated via alcohol intake, in their joint effect on candy consumption. Whereas dietary restraint was the more important predictor of candy consumption among sober

Table 1
Results of the Multiple Regression Analysis in the Control Condition

	<i>B</i>	<i>SE</i>	<i>t</i>
Valence	.76	.35	2.19*
Accessibility	-.53	.43	-1.24
Valence \times Accessibility	-.90	.37	-2.43*

* $p < .05$.

Table 2
Results of the Multiple Regression Analysis in the Experimental Condition

	<i>B</i>	<i>SE</i>	<i>t</i>
Valence	.87	.26	3.37**
Accessibility	-.03	.25	-.11
Attainability	-.22	.23	-.95
Valence \times Accessibility	-.51	.22	-2.31*
Accessibility \times Attainability	-.24	.25	-.95
Valence \times Attainability	.66	.26	2.52*
Valence \times Accessibility \times Attainability	-.60	.22	-2.69**

* $p < .05$. ** $p < .01$.

participants, alcohol intake enhanced the relation between prior attitudes toward candy and candy consumption. Similarly, preference for candy bars versus apples (as assessed by a personalized IAT) predicted choice behavior when participants had been made to feel happy, but less so when they were made to feel sad. In the latter condition, participants' beliefs about the attributes of candy bars versus apples proved more influential (Holland, de Vries, Hermsen, & van Knippenberg, 2012). Finally, individual differences in working memory capacity also were shown to play an important role in self-regulation (Hofmann, Gschwendner, Friese, Wiers, & Schmitt, 2008). Essentially, automatic attitudes toward a given temptation more strongly influenced behavior for individuals with lower working memory capacity, than for individuals with higher capacity.

From the present theoretical perspective, chronic accessibility¹¹ of attitudes (i.e., latency of the attitudinal response) toward objects (e.g., candy bars that they did not currently possess) attesting to strength of the attitudes in question could readily translate into degree of wanting them which given the assured attainability might well evolve into goals of obtaining and consuming them upon obtainment. Too, given sufficient cognitive resources, an alternative superordinate goal, for example, of dieting, could be deliberately activated and thus override the goal of consumption. Of interest, Fishbach, Friedman, and Kruglanski (2003) found that successful self-regulators activate such superordinate goal from memory immediately upon encountering a temptation (e.g., a candy bar for dieters), which mediates their ability to resist the temptation. The latter finding suggests that the self-regulation process can be automatized and liberated from its dependency on resources.

In summary, research cited in support of the MODE model is interpretable within the present framework in which—when combined with perceived attainability—attitudes toward objects may

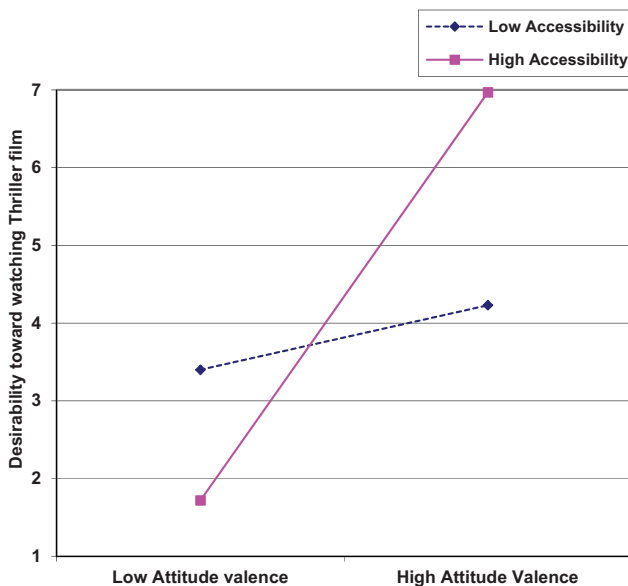


Figure 5. Desirability of watching a thriller film as a function of attitude valence and accessibility (High Attainability condition). See the online article for the color version of this figure.

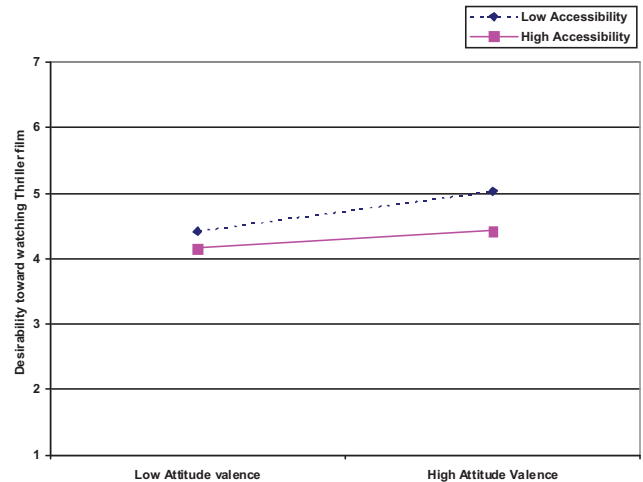


Figure 6. Desirability of watching a thriller film as a function of attitude valence and accessibility (Low Attainability condition). See the online article for the color version of this figure.

induce desires that contribute to formation of goals that (if dominant), may promote relevant goal-driven behavior. This analysis implies, moreover, that whether automatically activated or retrieved upon a more elaborative consideration, attitudes would not lead to behavior if the relevant attitude objects are not more positively or negatively valued relative to the actor's present states (prompting promotive or preventive wants) or if they are unattainable. For instance, an accessible attitude toward candy (e.g., accomplished by attitudinal priming or measured via response latency) may not lead to behavioral choice if one has already eaten enough sweets or if the likelihood of getting it was low (e.g., the candy was displayed in a store window during after hours).

Importance, certainty, and relevance. Holland, Verplanken, and Van Knippenberg (2002) investigated the role of attitude strength, measured by the aspects of *importance*, *certainty*, and *relevance*, as moderator of the attitude-behavior relationship. They hypothesized, and found, that strong attitudes toward an object (the Greenpeace organization) were more likely to lead to an attitude-related behavior (donating to Greenpeace) than weak attitudes. In the first study session, participants' attitudes toward Greenpeace were assessed, as was the strength of those attitudes. In the second session, participants were paid 10 Dutch guilders and asked whether they wanted to donate some of this money to Greenpeace. It was found that stronger attitudes predicted the amount of donation, whereas weaker attitudes did not. Once again, in this study attitude strength is likely to have evolved into the desire to donate, and given that the attainability of donation was assured, participants may have formed the goal to donate, which in turn drove their donating behavior. However, regardless of the strength of their attitude toward Greenpeace, participants would not presumably form the goal to donate—and would not subsequently act on that goal—if their expectancy of being able to do so was nonexistent (defining a lack of attainability), for example, or if they had

¹¹ In that attitude accessibility was measured before the behavioral options were presented.

just made a donation and had no more money to spare,¹² or if their prior donation eliminated the discrepancy (hence the Want) between one's positive attitude to Greenpeace, and one's lack of expression of that support.

Alternative attitude-strength studies could be similarly interpreted: In all such cases attitude strength did not seem to impact behavior directly but rather to have contributed to a state of wanting that when combined with attainability produced a goal that drove instrumental acts. Because attitudes may ultimately form a part of goals the same aspects of attitude strength, for example, extremity, accessibility, confidence, and so forth, that pertain to attitudes would also characterize goals that are based on the attitudes in question. However, as we have argued throughout, object attitudes alone are not enough and the subsequent links in the chain (depicted in Equation 3) need to be realized for behavior to occur.

Individual differences in attitude-behavior consistency. Closely related to the notion of attitude strength are individual differences in the attitude-behavior relation. The two most often discussed such differences are those of self-monitoring (Snyder, 1983) and self awareness (Wicklund, 1982). We discuss them briefly in turn.

Self-monitoring. Snyder and his colleagues (cf. Snyder & Kendzierski, 1982; Snyder & Swann, 1976) theorized and found that low monitors whose behavior is guided by internal cues, exhibit substantially greater attitude-behavior covariation than high monitors whose behavior is guided more by situational circumstances. This is likely because low (vs. high) self monitors attitudes are more chronically accessible (Higgins, 1996). Consequently, low monitors' attitudes are more likely to be translated into goals and hence drive goal relevant behavior. Instead, high monitors' goals are more likely to be formed on the basis of situationally primed attitudes giving rise to correspondent goals different from those based on their previously measured attitudes. Consistent with this analysis, Ajzen, Timko, and White (1982) showed that the difference in attitude-behavior consistency between high and low self-monitoring individuals was located in the relation between intentions and behavior. While the attitude-intention relation was similar for both groups, low self-monitors exhibited significantly stronger intention-behavior correlations than did high self-monitors, presumably because the latter had a different goal activated in the situation prompting a different behavioral intention.

Of particular interest too, Snyder and Kendzierski (1982) found that when the behavior was equally relevant to high and low self monitors, representing a strong *goal* based on the measured attitudes, the difference between them disappeared in that now the high self monitors too acted consistently with their attitudes.

Self awareness. According to Wicklund (1982) individuals high in self awareness should exhibit greater attitude-behavior consistency than ones low in self awareness. Specifically (p. 157) highly aware individuals are attuned to their attitudes which has "a motivational consequence: If it is difficult to remove oneself from self-aware condition, then the person can be expected to show increase in consistency." Just as with low self monitoring, high self awareness, or high private self awareness (Froming, Walker, & Lopyan, 1982; Scheier, 1980) represent chronic accessibility of one's attitudes likely to transform into goals that drive behaviors. As Carver and Scheier (1998) aptly summarized it: "Focusing on

the private versus public aspects of the self is nothing more than taking one package of goals as salient, rather than another package of goals. In either case, the goals that are taken up and attended to are the ones that become manifest in actions" (p. 119).

Refocusing on Behavior: Ajzen and Fishbein's TRA and TPB Models

A unique and highly influential approach to the attitude behavior issue is represented in Fishbein and Ajzen's theories of reasoned action (TRA) and of planned behavior (TPB; e.g., Ajzen, 1985, 2012; Fishbein & Ajzen, 1975, 2010). Their essential argument was two-pronged. (a) First they proposed that *general object attitudes*, of the kind typically addressed by attitude researchers (e.g., Cacioppo et al., 1981; Eagly & Chaiken, 1993; Fazio, 2007; Thurstone, 1931) are in principle unrelated to specific behaviors and hence they should be relinquished as behavioral predictors. (b) Instead, they proposed that focusing on *attitudes toward the behavior* provides a more effective method of behavioral prediction. In what follows, we examine both arguments in greater detail and discuss them from the present theoretical perspective.

On general attitudes and specific behaviors. In most treatments of the attitude concept, its referent was an object, an issue or a state of affairs. In this vein, Wicker (1969) defined attitudes as "evaluative feelings of pro or con, favorable or unfavorable, with regard to particular objects" (p. 42). Examples of attitude objects included in Wicker's (1969) review range from attitudes toward jobs and minority group members to attitudes toward breastfeeding, public housing, and student cheating. And the issue of attitude-behavior consistency typically referred to the question of whether such attitudes toward objects instigate relevant (approach or avoidance) behaviors toward those objects. Examples of such behaviors include *job performance* and *absences*, as function of attitudes toward the organization, willingness to *provide service* to a minority group member, as function of attitudes toward that group, *applying* for public housing as function of attitudes toward public housing, and *cheating* on a self-graded exam, as function of one's attitude toward honesty (Wicker, 1969). In all those instances, the *general attitude* toward the object is clearly conceptually separate from *behavior* toward the object, and the question, again, was whether the former gives rise to the latter.

In a creative break from that tradition, Fishbein and Ajzen (1975, 2010; Ajzen, 1985, 2012) proposed instead to focus on *attitude toward the behavior* as a more reasonable marker of behavior's occurrence. According to Fishbein and Ajzen (2010): "We cannot expect strong relations between general attitudes toward an object and any given behavior directed toward that object" (pp. 258–259). According to the authors then, a general attitude toward an object will predict an *aggregate* of behaviors relevant to the attitude but not any specific behavior (Ajzen, 2012; Fishbein & Ajzen, 2010). Empirical support for that assertion comes from studies by Fishbein and Ajzen (1974) on religious behavior, Wei-

¹² Relevant to this point, Holland et al. (2002) excluded from the analysis members of the Greenpeace organization who did not donate money. These participants ($n = 5$) had a good reason not to donate money, as they already paid membership fees" (p. 872). Thus, the authors actually excluded from their study participants who did not have the goal to donate—presumably because including them would change their results.

gel and Newman (1976) on environmental behavior, and Werner (1978) on abortion activism, to be discussed later.

Behavior focus. Instead of addressing general object attitudes, Ajzen and Fishbein's (1980; Fishbein & Ajzen, 1975) TRA and Ajzen's (1985) subsequent TPB, center on the construct of *behavioral intention*, assumed to constitute the direct antecedent of actual *behavior*. In turn, behavioral intention is determined by (a) *attitude toward the behavior*, which constitutes the sole attitudinal component in the TPB/TRA models (Ajzen, 2012), (b) *subjective norms*, and (c) *perceived behavioral control*. These factors are themselves determined by underlying behavioral, normative, and control beliefs. According to the TPB then, by measuring attitudes to the behavior, perceived norms, and perceived behavioral control, we should be able to predict intentions to perform a single behavior, which in turn is highly correlated with the behavior's actual occurrence. We elaborate on these concepts in what follows.

Attitude toward the behavior (AB) reflects the degree to which performance of the behavior is positively or negatively valued; such attitude is assumed to vary as function of the sum total of the behavior's believed instrumentalities to different outcomes weighted by their respective desirabilities. For example, attitude toward *running* may depend on one's beliefs in the likelihood that running facilitates (a) cardiac health, (b) weight loss, (c) stress reduction, and so forth; times the subjective desirability (values) of each of these outcomes.

Perceived behavioral control (PBC) refers to people's general expectations regarding the degree to which they are capable of performing a *given behavior*, the extent to which they have the requisite resources and believe they can overcome whatever obstacles they may encounter. Whether these resources and obstacles are internal or external to the person is immaterial (Fishbein & Ajzen, 2010).¹³

PBC is determined by salient control beliefs, which are elicited by asking participants to list the factors they believe would enable them to perform *the behavior* as well as factors that are likely to impede its performance. For instance, in a study on mountain climbing (Ajzen & Driver, 1991), participants listed having good weather, not having proper equipment, living near mountains, lacking skills and knowledge for mountain climbing.

Finally, *subjective norm* (SN) is defined as a perceived social pressure to engage or not engage in a given behavior. It is determined by the total set of accessible normative beliefs concerning the expectations of important others (injunctive norms) and descriptive norms (how important others behave). As can be seen then, all three proposed determinants of behavioral intentions are focused on a specific behavior, including its evaluation or likability (attitude toward the behavior), perceived ability to execute it (i.e., perceived behavioral control), and the degree to which the behavior is normative or not.

Empirical support for the TPB model has been extensive and wide ranging. Its bulk was summarized in several meta-analyses. Some of these were general and cut across broad swathes of different behaviors (Armitage & Conner, 2001; Notani, 1998); others focused on specific behavior-types (e.g., condom use, Albarracin, Johnson, Fishbein, & Muellerleile, 2001; health behavior, Cooke, & French, 2008). In Armitage and Conner's (2001) meta-analysis, for example, the multiple correlation of attitude, subjective norm and perceived behavioral control accounted for 39% of the variance in behavioral intentions. And in a meta-analysis of

studies on condom use, correlation of attitudes and norms explained 49% of the variance (Albarracin et al., 2001).

What Drives Behavioral Intentions? A View From a Goal Systemic Bridge

Ajzen's and Fishbein theories of reasoned action and of planned behavior have been immensely influential¹⁴ and of practical utility in predicting specific behaviors. However, the present conceptual perspective may importantly complement their models by elucidating the psychological processes that must transpire in order that attitudes toward objects and attitudes toward specific behaviors translate into actions.

In a gist, we suggest that TPBs behavior-focus neglects to explicitly consider that behavior is goal driven.¹⁵ That is, behaviors typically constitute means to goal attainment, and it is goal pursuit that drives behavior in the first place (cf., Huang & Bargh, 2014). It follows that neither attitude toward a behavior, nor subjective norm nor perceived control would predict behavioral intentions *if* the goal served by the behavior was not activated. From the present perspective then, the TPB reverses the natural order of things and puts the (behavioral) "cart" before the "horse" (of goal pursuit). Accordingly, we propose to *reinstate* general object attitudes as important contributors to goal formation, and to *attenuate* the behavior focus of Fishbein and Ajzen's models. In what follows, we examine these notions in greater detail.

Can general object-attitudes drive specific behaviors? Consider the relation between a general attitude (A) toward an object and a specific behavior (B) toward it. Assuming that liking or disliking toward an object culminated in a goal to attain or avoid it such goal might be attainable via different behavioral means. This situation is known as one of *equipfinality* (Heider, 1958; Kruglanski et al., 2002). If a highly diverse set of means was entertained by the actor, it might be difficult to predict what particular behavior she will undertake in the service of the goal, a difficulty seemingly supportive of Ajzen and Fishbein's objection to the use of general attitudes as predictors of behavior. However, note that the difficulty here *is not immanent*, or inevitable in the

¹³ The TPB notion of perceived behavioral control (PBC) is conceptually distinct from the notion of goal attainability. As noted above, PBC refers to one's ability to carry out a *specific behavior*, whereas goal attainability refers to one's general expectancy of being able to accomplish a given goal through one's actions. For instance, attainability may be affected by one's general sense of efficacy (Bandura, 1993) or an incremental mindset (Dweck, 2006) not having to do with a specific behavior.

¹⁴ According to Nosek et al.'s (2010) intuitive guide (<http://projectimplicit.net/nosek/papers/citations/citedarticles.html>) articles with above 3,000 citations count as having "transformational impact." In these terms, three of the Ajzen and Fishbein articles can claim to have exerted transformational impact, notably Fishbein and Ajzen (1975) with 11,300 citations, Ajzen and Fishbein (1980) with 9,824 citations, and Ajzen (1991) with 7,667 citations.

¹⁵ Fishbein and Ajzen (2010) do mention the goal concept, in the context of suggesting that behavior is more predictable, and hence more amenable to study, than goal attainment. As they put it "Attainment of a goal depends not only on the person's behavior but also on the other factors over which the person may have little or no control" (p. 57), therefore: "as a general rule, intentions will usually be better predictors of behaviors than of goal attainment" (Fishbein & Ajzen, 2010, p. 58). However, our present concern is not whether goals are attained, but rather whether behavior is goal driven and, therefore, predictable from goals active in a situation.

relation between general object attitudes (transformed into goals) and specific behaviors. Indeed, there can be cases where the goal object is best attained by a specific habitual means (Wood & Neal, 2007). In those instances, general object attitudes could in fact be highly related to specific behaviors, albeit via mediation of goals based on the attitudes in question. For instance, some individuals' positive attitude toward fitness could translate into their adopting the fitness goal, in turn perceived as best served by swimming. Though, generally speaking, running, weight training, and judo could also be perceived as fitness related, for the individuals in question they might not be associated with the fitness goal, in which case the relation between individuals' attitude toward fitness and swimming would not be significantly enhanced by an aggregate incorporating also those other behaviors. Moreover, in some cases a positive relation between a fitness attitude and swimming could appear alongside a negative relation between that attitude and running; for example, an individual who feels very positive about fitness could choose to spend all of his or her time swimming, which would leave him/her with hardly any time at all for running. In such a case, the correlation between the attitude and the aggregate containing both swimming and running would be *lower* than the correlation between the attitude and swimming alone.

Empirical Study 4: General attitudes can drive specific behaviors. To investigate these matters empirically, we recruited one hundred and four MTurkers (43 females).¹⁶

Attitude. Participants rated their attitude toward "being in shape" on four 11-point scales ranging from -5 to 5, with the endpoints marked "bad-good," "harmful-beneficial," "foolish-wise," and "unpleasant-pleasant." Cronbach's α for the four attitude items was 0.89.

Goal. Participants answered three questions about the extent to which being in shape is their current goal: "Please rate the extent to which being in shape is your current goal," "How likely do you think it is that you will be in shape in the next few months?," and "How important is it to you to be in shape in the next few months?" Participants responded to these items on an 11-point scale ranging from 0 to 10. Cronbach's α for the three goal items was 0.80. The order of the goal and attitude questions was randomized across participants to minimize any potential order effects.

Behaviors. Participants had to indicate how often they performed each of 24 fitness activities (e.g., biking, running, weight-lifting) on an 8-point scale ranging from "never" to "daily."

Relations between variables. Our main dependent variable was the frequency of the most often-used behavior for each participant, viewed here as the most preferred means to the goal of fitness. The relevant descriptive statistics and correlations are displayed in Table 3. As may be seen, the correlation between attitudes and goals is highly significant, consistent with our notion that (relative) attitudes constitute the evaluative component of goals. It is also noteworthy that attitudes are significantly related to each participant's most preferred behavioral means to fitness, although the relation between goals and most preferred behavioral means is stronger (albeit not significantly so). Also of interest, both attitudes and goals are related to (each participant's) aggregate of fitness behavior, with the correlation between goals and aggregates being somewhat higher than the correlation between attitudes and aggregates.

Table 3
Correlations

	Attitude	Goal	Frequency of dominant behavior	Aggregated behavior (sum)
Attitude				
Goal	.58***			
Frequency of the dominant behavior	.27*	.40***		
Aggregated behavior (sum)	.21*	.34**	.53***	
Mean	3.78	6.95	5.70	36.93
SD	1.37	2.17	1.58	8.87

The mediation model. As already noted, our theory suggests that attitudes constitute the evaluative component of goals, which in turn are the drivers of behaviors. This suggests that the relation between attitudes and behaviors should be mediated by goals. We analyzed the mediation model using the PROCESS program (Hayes, 2013). As shown in Figure 7, the total effect of attitude on behavior was significant ($b = 0.31$, $SE = 0.12$, $\beta = .27$, $p = .010$). Attitude had a significant and positive effect on goal ($b = 0.92$, $SE = 0.14$, $\beta = .58$, $p < .001$). Goal had a positive effect on the most frequent behavior ($b = 0.26$, $SE = 0.09$, $\beta = .36$, $p = .004$). The indirect effect of goal on the most frequent behavior estimated with 20,000 bootstrapped samples was significant ($b = 0.24$, 95% CI [0.10,0.46]). The direct effect of attitude on behavior was not significant ($b = 0.07$, $SE = 0.14$, $\beta = .06$, $p = .613$). The entire model was significant, $F(2, 88) = 8.31$, $p < .001$, $R^2 = .16$. These findings, depicted in Figure 7, are consistent with our theory whereby behavior is driven by goals of which attitudes constitute the evaluative component.

In brief then, adopting the goals-means perspective affords a demarcation between a case where an attitude toward an object is highly related to a specific behavior, and a case where it is not, but is highly related to a behavioral aggregate. The former case obtains where the goal based on the attitude is predominantly served by the *specific behavior*, being the most preferred or habitual means to that objective (Wood & Neal, 2007). In contrast, the latter case obtains where that goal is served often by other equifinal behaviors. An illustration of this demarcation is given in Figure 8. It depicts Goal B that is served by three means, each being equally instrumental to the goal (and so equally often used). In contrast, Goal A is served by three unequally instrumental means. In that latter case, Means 1 is more instrumental (and hence more preferential) than Means 2 and 3.

The former case—wherein each goal is served by several equal means—typified studies cited in support of the behavioral aggregate hypothesis. Thus, in Fishbein and Ajzen's (1974) study on religious attitudes, researchers gave participants a checklist of 100 religious behaviors, and most participants checked off many such

¹⁶ We excluded 11 participants from the analyses because they did not perform any activity at all (and therefore had no score on the dependent variable). We also excluded 2 participants from the analyses because they indicated that they performed all 24 physical activities we listed (that is highly unlikely); however, the analyses with and without those two participants included were nearly identical. Thus, the following analyses refer to 91 participants.

behaviors. Similarly, in Weigel and Newman's (1976) study of environmental attitudes, participants were offered 14 environmentally friendly behaviors and many participants chose more than one of those behaviors. In Werner's (1978) study of abortion activism, participants were given an 83-item checklist of behaviors related to the goal of activism and many participants chose several such means to the goal of activism. We argue that the behavioral aggregate was more closely related to attitudes in these instances because all of the means the participants chose from were equally related to the goal (the example of Goal B in Figure 8). However, in cases in which one means stands out from the rest in terms of its association with the goal (e.g., Goal A in Figure 8), a specific behavior can have a higher correlation with the attitude than does the behavioral aggregate.

To reiterate then, a *general attitude* could be related to a *specific behavior* if the attitude contributed to a dominant goal formation (via the process elaborated earlier) and the goal was habitually served by the behavior in question. More generally then, the goal perspective identifies an important qualification concerning Ajzen and Fishbein's generalization, which categorically denies the possibility of (general) attitude to (specific) behavior relation (cf. the compatibility principle, e.g., Fishbein & Ajzen, 2010, pp. 258–259). However, if *general object attitudes* can be related to specific behaviors (via the mediation of goals to which the attitudes contribute) then the dismissal of general attitudes as predictors of behavior, which motivated the TRA/TPB switch to *attitudes toward the behavior* seems unwarranted. However, let us consider now the constructive aspect of TRA/TPB theorizing that centers on the concept of behavioral intentions.

On the determinants of behavioral intentions. First, it should be clear that the concept of *behavioral intention* in TRA and TPB refers to intention to execute a given *behavior*, and *not* to attain a given *goal*. As Fishbein and Ajzen (2010) put it,

“Behavioral intentions are indications of a person's readiness to *perform a behavior*. The readiness to act, represented by an intention, can find expression in such statements as the following: I will engage in the *behavior*, I intend to engage in the *behavior*, I expect to engage in the *behavior*, I plan to engage in the *behavior*, I will try to engage in the *behavior*.” (p. 39, italics added)

In essence, behavioral intention concerns an act that serves as *means* of goal attainment. Furthermore, the concepts of means and goals are clearly distinct at least for the large class of extrinsically motivated behaviors serving ulterior ends distinct from those behaviors (Shah & Kruglanski, 2000).

A staple of the TRA-TPB approach is the notion that behavioral intentions are the antecedents of behavior. According to Ajzen

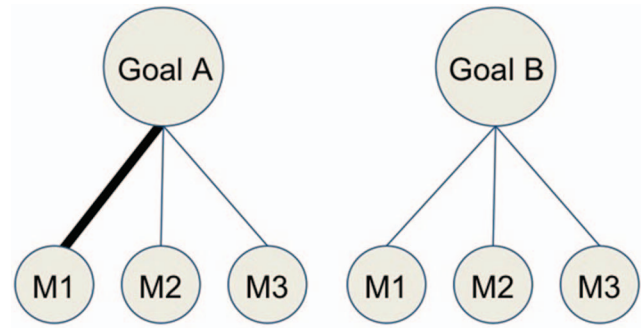


Figure 8. Two cases of goal-means relations. See the online article for the color version of this figure.

(1991), “the intention to perform a given behavior is ‘a central factor in the theory of planned behavior,’” presumably because “the stronger the intention to engage in a behavior, the more likely should be its performance” (p. 181). The latter assertion seems hardly controversial and rather a matter of common sense, however. Systematic research as well attests that especially where the intention is assessed in close proximity to the behavior its relation to the behavior is strong.¹⁷ None of it seems very surprising. It seems obvious, for instance, that an intention¹⁸ reported moments before the intended behavior should eventuate in the behavior unless something unexpected happened. An individual admitting in line to the box office to her intention “to view a movie” will generally be expected to follow up on her intention, and so a person reporting an intention of “going for a run” while putting on her running shoes.

The contribution of the Ajzen and Fishbein's approach presumably lies not in the presumed *intentions to behaviors* link as such, but rather in their suggested determinants of behavioral intentions, namely attitudes toward the behavior, subjective norms and perceived behavioral control. Here is where the present analysis diverges from their view. Specifically, we suggest that behavioral intentions are crucially *goal driven*, as the intention to perform a given behavior rests on beliefs that it constitutes a *preferred means* to a currently active goal.¹⁰

Given the presence of an active goal, out of the class of available means to that goal the *preferred means* might be affected by beliefs about social norms, attitudes to behavior and perceived behavioral control. But none of these should matter *if an entirely different goal was in place*. For instance, if one likes running (attitude to behavior), most of one's friends applauded running (subjective norm), and one is quite capable of running (perceived

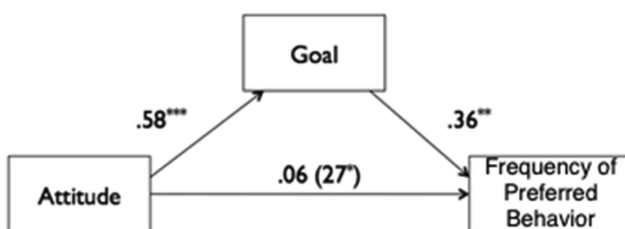


Figure 7. Mediation model of attitudes, goals, and behavior.

¹⁷ Meta-analysis of 47 experimental tests of intention—behavior relations (Webb & Sheeran, 2006) showed that changing participants' intentions had a greater impact on behavior when the time interval between the intention and behavior measures was short (i.e., less than or equal to the median value of 11.5 weeks) as compared with long ($d = 0.46$ vs. 0.23). Other meta-analyses (e.g., Sheeran & Orbell, 1998) have shown the same pattern.

¹⁸ Warshaw and Davis (1985a, 1985b) draw the distinction between behavioral intentions and behavioral expectations, that is, the expectations that one would execute the behavior and find evidence that the latter (vs. the former) can be the superior predictors of behaviors, for example, where one can foresee that one's intentions to perform a given behavior might change under the circumstances.

behavioral control)—one might well form the behavioral intention to run and implement it too, but *only if* a relevant goal, say fitness, was activated. Should an entirely different goal be activated, for example, studying for an exam, or preparing a dinner party, attitudes to running, subjective norms about running, and so forth, even if contextually primed, would hardly produce the behavioral intention to run.

Moreover, assuming that a goal assumed to be served by the behavior was indeed activated, it is important to ask what factors determine whether the intention to execute that particular behavior will be formed. As elaborated earlier, we assume that a behavioral intention is formed as function of the behavior's perceived (a) *instrumentality* to goal attainment (Labroo & Kim, 2009; Warshaw & Davis, 1985b), and/or its perceived (b) *supplementarity*, the conferral of added benefits beyond the specific goal's attainment (Kruglanski, Kopetz, et al., 2013).

From that perspective, in cases where they do impact behavioral intentions, "attitude toward the behavior" and "subjective norm" may largely reflect the perceived (by oneself and others) instrumentality/supplementarity of the behavioral means with respect to a *currently active goal* (whereas perceived behavioral control simply reflects one's ability to carry out that behavioral means). In this sense, AB and SN may function as *indirect* indices of instrumentality and supplementarity and there could exist alternative such indices not anticipated by TPB—for instance, *expert opinion* as to what behaviors are instrumental to a current goal, or *motivational biases* that influence perceptions of instrumentality or supplementarity (cf., Bélanger, Kruglanski, Chen, Orehek & Johnson, 2015).¹⁹ These considerations, absent from the TRA and TPB models, follow directly from the assumption that behavior is goal driven, and its choice hinges on its efficacy in regard to goal attainment.

Empirical Study 5: Attitudes toward behavior, perceived instrumentality, and intention formation. We tested the hypothesis that presumed determinants of behavioral intentions identified in the TPB (i.e., attitude to the behavior, subjective norm, and perceived behavioral control) will predict intentions only where the behavior serves as means to an active goal. Consistent with the present theory, we predicted also that in the latter case impact on intentions would be mediated by the perceived *instrumentality* of the behavior to goal attainment. We tested these hypotheses with regard to the behavior of "drinking alcohol when going out."

Forty-seven participants (23 females) took part in this study, which was carried on Amazon's Mechanical Turk on a Friday and Saturday afternoon. Participants rated their *attitude toward the behavior* of "drinking alcohol while going out" on three scales with the endpoints marked "very bad to very good," "very harmful to very beneficial," and "very unpleasant to very pleasant." They also answered the question "How much do you like drinking alcohol when going out?" on a scale ranging from *not at all* to *very much* (Cronbach's $\alpha = .89$). To measure *subjective norms*, we averaged participants' ratings of agreement with two items (adapted from Fishbein & Ajzen, 2010): "Most people who are important to me approve of me drinking alcohol when going out" and "Most people who are like me drink alcohol when they go out." ($r = .58$). *Perceived behavioral control* was measured with an item "Drinking alcohol when I go out is up to me." *Instrumentality of the behavior* was measured with one item: "How much

does alcohol help you have fun when going out?" *Behavioral intention* was measured with one item: "I intend to drink alcohol tonight." Finally, we asked participants whether they had the *goal* of going out to have fun that night on a scale ranging from *definitely not* to *definitely yes*. All items were answered on a 7-point scale.

Results. We tested a moderated mediation model with attitude as a predictor and behavioral intention as the outcome variable. Instrumentality was treated as the mediator and goal was included as a moderator of the instrumentality-behavioral intention path (see Figure 9). We used the PROCESS program for this analysis (Model 14, Hayes, 2013).

The total effect of attitude on intention was significant ($b = .44$, $SE = .18$, $\beta = .34$, $p = .021$). When controlling for attitude toward the behavior, subjective norm and perceived behavioral control had no significant relation to intentions and we excluded them from the final model.²⁰ Attitude had also a significant and positive effect on perceived instrumentality of the behavior ($b = 1.01$, $SE = 0.17$, $\beta = .67$, $p < .001$). As expected, there was a significant interaction between instrumentality and goal presence ($b = 0.13$, $SE = .05$, $\beta = .28$, $p = .02$). More importantly, the indirect effect of attitude on intention mediated by instrumentality, estimated with 20,000 bootstrapped samples, was significant when the goal was present ($b = 0.52$, 95% CI [0.24, 1.31]) but nonsignificant when the goal was absent ($b = 0.09$, 95% CI [-0.13, 0.35]). Index of moderated mediation was significant (0.13, 95% CI [0.04, 0.34]). The direct effect of attitude after controlling for instrumentality and goal was not significant ($b = 0.31$, $SE = 0.22$, $\beta = .23$, $p = .179$). The entire model was significant, $F(4, 42) = 6.14$, $p < .001$, $R^2 = .37$. Consistent with the present theory then, attitudes toward the behavior predict behavioral intentions only where the behavior serves a current goal, highlighting the centrality of the goal concept to behavior's occurrence.

Prior Support for the TRA-TPB Models

Indeed, a close review of prior support for the TRA-TPB formulations reveals a clear, albeit unarticulated, presence of active goals to which the behaviors chosen served as means. To wit, in a widely cited study by Schifter and Ajzen (1985) on weight loss success in college women, the authors were specifically interested only in participants who very likely had the *goal* to lose weight, as attested by the authors' comment that "women who considered themselves overweight were encouraged to participate" in the study (p. 845). More generally, the wording of Schifter and Ajzen's intentions measures was very similar to how one might phrase a goal: The participants were asked to respond to items such as "I will try to *reduce weight* over the next 6 weeks" and "I have

¹⁹ It is of interest to note in this connection that the multiple correlation of attitude to behavior, subjective norm and perceived behavioral control account for rather low percentage of variance in behavioral intentions (39% in the Armitage & Conner, 2001, analysis and above 36% in Fishbein & Ajzen's, 2010, review). Consistent with the present analysis then, the AB, SN, and PBC measures do not appear to fully tap the determinants of behavioral intentions.

²⁰ It will be noted that in the situation depicted in this study subjective norm was highly correlated with attitude toward the behavior ($r = .85$), suggesting that the attitude reflected an internalized norm, and perceived behavioral control was uniformly high among participants (restricting the range on this variable).

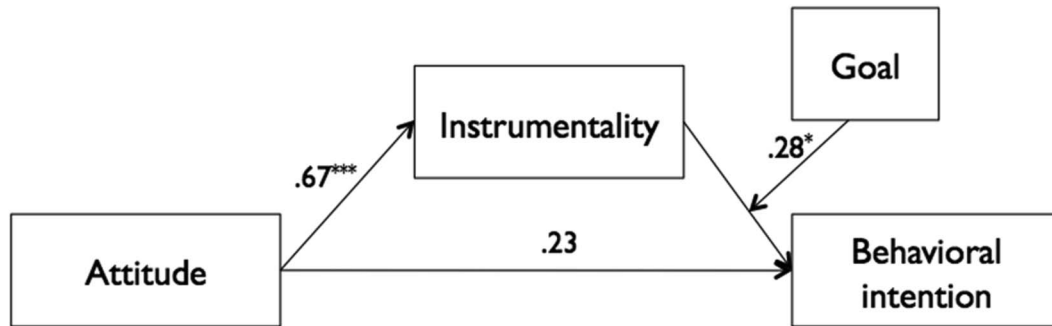


Figure 9. Moderated mediation model of attitude, instrumentality, goal, and behavioral intention.

decided to lose weight over the next six weeks.” These measures are more related to the *goal* of losing weight in the near future, than to the intention to perform a *specific behavior* to that end.

Other studies of attitude-behavior relation strongly imply the situational presence of goals that drove the behavior of interest—for instance, Sivacek and Crano (1982) posited that what they termed “vested interest” moderates attitude-behavior consistency. In two studies, they found that the strength of the attitude-behavior relationship varied as a function of individuals’ perceived vested interest on the attitude issue, with those who had more vested interest displaying higher attitude-behavior consistency. Specifically, students who felt strongly that they would be affected (either positively or negatively) by the imposition of a university-wide comprehensive exam behaved more consistently with their expressed attitudes toward the exam. Again, it seems highly plausible that for affected students promoting the exam or preventing it (respectively) constituted an important *goal* that drove their behavioral choices.

Attitude toward the behavior as such would matter if the goal(s) to which the behavior was instrumental were present in the situation. For instance, if several of the behavior’s consequences (affecting attitude toward the behavior according to TPB) defined situationally present goals, such *multifinal* behavior would be chosen over its less multifinal alternatives (Kruglanski, Kopetz, et al., 2013). In this vein, Fabrigar et al. (2006) suggested that the relevance of an attitude to a particular behavior moderates attitude-behavior consistency. They tested this by giving participants information about two department stores and asking them to choose where they would buy a camera after they had either been given relevant information about the camera department or not. Across three studies, Fabrigar et al. (2006) found that attitudes toward the department stores were more likely to lead to behavior when the attitudes were relevant to the behavior, that is, where the relevant information suggested the camera department to be superior or inferior. Clearly in this case, buying a high quality camera constituted participants’ (hypothetical) *goal* and relevant (vs. irrelevant) information about the camera department pertained to whether a given camera department (vs. its alternative) would be a better (more instrumental) means to that goal. However, general information about the department store (producing an attitude toward the store) pertained to other goals that a purchaser might well have in this situation, concerning customer service, aesthetic experience, and so forth, suggesting that carrying out a purchase in the specific department store may be *multifinal* (Kruglanski, Kopetz, et al., 2013). Therefore, if the camera department was portrayed as

superior (for instance) and the attitude toward the department store was positive (i.e., one could expect other concerns to be met in that store) the purchase would be more likely (purchase would be perceived as a more multifinal means) than if attitude to the department store was negative. However, attitude to the department store should matter little if the camera department was inferior (defining an ineffective means to the focal goal).

Finally, several recent studies have demonstrated that priming manipulations induce behavior only if they create conditions that affect the activation of preexisting goals. Thus, Stroebe et al. (2013) observed that only obese (vs. nonobese) shoppers (for whom weight loss was a likely goal) were influenced by diet/health primes handed out in a recipe flyer, and proceeded to purchase significantly fewer unhealthy snack items. Similarly, Fitzsimons and Bargh (2003) found that priming participants with the word “mom” increased achievement only for those who *wanted* to make their mom proud of them.

In summary, the goal-systemic notions of means-ends relations seem helpful to clarifying the conditions under which (a) a general attitude may or may not bear a substantial relation to a specific behavior, as well as circumstances under which (b) the presumptive determinants of a specific behavioral intention spelled out in the TPB will or will not produce the intention in question. In that sense, the present analysis identifies important limitations to generalizations suggested by the TPB.

General Discussion

Beyond random bodily movements and reflex actions, human behavior is purposive or goal driven (cf., Tolman, 1932). This pertains to explicit, highly conscious goals (getting admitted to college, acquiring a home) as well as to implicit, below the radar goals induced by subliminal priming—such as goals of cooperation, competition, self-control or achievement (cf. Bargh et al., 2001; Hassin et al., 2009; Kleiman & Hassin, 2011). It pertains to spontaneous or “automatic” behaviors that require little energetic resources, as well as to “deliberative” behaviors whose execution is driven by considerable resources. In all these instances, however different in some respects, behaviors typically constitute means to situationally present goals.

Though attitudes are relevant to goal formation they do not in and of themselves define goals. To address the additional steps that need to take place, the present, goal-systemic, analysis depicts a multiply contingent path (expressed in Equation 3) between attitudes toward objects or states of affairs and behaviors related to those attitudes.

Based on a widely accepted definition of attitudes as evaluative responses akin to liking, we noted first that liking (in an absolute sense) need not be tantamount to wanting (Bagozzi, 1992; Berridge, 2004). Rather, wanting implies a disparity, a discrepancy of a promotive or preventive kind (see Equations 1 and 2), between liking of a present versus a future state. Moreover, in itself wanting (desire) may not produce goal formation (Kruglanski et al., 2014). Rather, perceived attainability should be at an above threshold level for goal formation to ensue. Furthermore, for a given goal to drive behavior it needs to be dominant in the situation rather than being overridden by other more important objectives (Huang & Bargh, 2014; Shah et al., 2002). Finally, a specific behavioral means needs to be chosen as superior in some sense (e.g., as most instrumental, or most multifinal) to other available means to the same end. In short, for an attitude to eventuate in a specific behavior a chain of events needs to unfold, each constituting a necessary link without which the attitude behavior connection would be severed.

Our analysis builds on prior models and research on attitude-behavior relations and identifies limitations to their applicability. Specifically, we considered from the present theoretical perspective the two major paradigms wherein the attitude behavior relation was studied: (a) the attitude strength paradigm and (b) the behavioral focus paradigm. In regard to the first paradigm, our theory implies that although strength of an object-attitude at some minimal magnitude seems necessary for relative *liking* (R_L) of future versus present states to transform into *wanting*, attitude strength alone is insufficient to drive behavior. Specifically, wanting must combine with attainability beliefs to foster goal formation, the goal thus formed must be the dominant one in the situation and the behavior must represent a chosen means to that particular goal.

More important, this process is assumed to apply equally to automatically driven, or “spontaneous” behaviors prompted by goal priming (e.g., Bargh et al., 2001) and to behaviors undertaken after a painstaking, “deliberative” consideration of the attitude object’s “positive and negative features, (as well as) . . . costs and benefits.” (Fazio, 1990, p. 89, parentheses added). The latter deliberative process may result in a construction of a new object-attitude that may translate into *wanting* (to attain or avoid it). It is also worth noting that the “choice” aspect of means to the goal may reduce in some cases to just embracing the habitual means that popped up upon goal formation; that might occur if such means was strongly conditioned to the goal and if the actor lacked the motivation or the resources to seek alternative means.

Concerning the *behavior focus* paradigm, the major implication of our analysis is that its dismissal of object attitudes’ part in driving behavior was premature. It is such attitudes after all that (in their relative form, R_L) contribute to goal formation, which ultimately results in behavior. Indeed, we have seen that when a given behavior is strongly preferred as means of goal attainment, the relation between the general attitude and the specific behavior can be quite substantial, and it is crucially mediated by goal formation based on the attitude in question (see Figure 7).

Moreover, whereas there can be no doubt that behavioral intentions do drive behavior, we question the proposal of the TRA and TPB models that it is attitude toward the behavior, behavioral norms, and perceived behavioral control that necessarily determine behavioral intentions. According to the present analysis, (a) none of these factors would affect behavioral intentions if the goal to which the behavior was the means was absent, whereas (b) if the

goal was present these factors, though relevant, may not be the exclusive or the most important determinants of behavioral intentions. Rather, the behavior’s *instrumentality* to the goal and its *supplementarity* (tapping the classic motivational parameters of expectancy and value, respectively) could be the primary determinants of behavioral intentions.

Testability

Our “Rocky Road” model of attitude to behavior relations has numerous testable implications. Two alternative research strategies may be followed in this regard, namely of (a) *subtracting*, or (b) *bypassing* links in the attitude to behavior chain. In that chain the attitude elements (i.e., relative liking) are viewed as distal to behavior, and the wanting and goal elements are viewed as more proximal to behavior. The subtractive strategy rests on the implication that if the proximal elements to which attitudes contributed were missing, the attitude to behavior chain would be severed, and no behavior would follow from mere attitudes. For instance, we predict that an accessible attitude would fail to induce behavior if a reasonable sense of goal attainability was absent. Moreover, even if attainability was present, no attitude-related behavior should follow if a different goal, unrelated to the accessible attitude, was dominant.

Similarly, the determinants of a behavioral intention identified in the TPB (attitudes to the behavior, etc.) should fail to produce the intention (and the correspondent behavior) if the goal was absent to which the behavior in question was a means. Finally, those determinants should fail to engender a behavioral intention if a different behavior was identified as more *instrumental* toward goal attainment (Labroo & Kim, 2009), and/or to bring greater supplementary value, by dint of its *multifinality* (Kruglanski, Köpetz et al., 2013). These varied implications could be profitably probed in future research guided by the present model.

An alternative research strategy rests on *bypassing* the distal elements in the chain and focusing on the proximal ones. Specifically, if measures of the proximal elements were available measures of the distal (constitutive) links would be superfluous and could, therefore, be bypassed in behavioral prediction. For instance, if measures of *wanting* were available, measures of *attitudes* could be dispensed with, because they would have been already encompassed in the wanting measures. Similarly, measures of *goal formation* would obviate measures of *wanting*, because wanting is part and parcel of goal formation. Simply put, effects on behavior of the early links are assumed to be mediated by the subsequent links so once the latter are taken into account, effects of the former would vanish (as in Figure 7 above). These predictions too could be fruitfully explored in future research.²¹

²¹ It is noteworthy that the present model can be fruitfully applied to all domains of research where the attitude-behavior relations were investigated. Take, for instance, individual differences in attitude-behavior consistency. The findings of such differences presumably reflect the relative stability of individuals’ (attitude derived) goals that drive the consistency. For instance, it is found that low self-monitors tend to act more consistently with their attitudes than do high self-monitors (Snyder, 1983), and it is possible that the attitudes and attitude derived goals of the former are more stable and chronically accessible than those of the latter. In that instance too, one would predict that if goal formation was rendered impossible (e.g., by eliminating attainability) the attitude behavior consistency for the individuals involved would vanish as well.

Finally, it is of interest to consider an approach to behavioral prediction based on the goal systemic perspective. Such approach would require close attention to the several relevant elements in the attitude-to behavior chain as they may be represented in a given context of interest. Specifically, information about the *person* and about the *situation* would be needed. The former would concern the potential actor's general motives in accordance with a broad motivational taxonomy, for example, by Fiske (2003) or Higgins (2012). Information about the situation would concern the motive-relevant goals a given situational context may induce, and the means that the situational constraints may afford. For instance, if an individual was assessed as high on achievement motivation and the situation was deemed to activate an achievement goal, a person may embark on an achievement task if one was available. Moreover, a task believed to be most instrumental to gratifying one's achievement motivation (e.g., one where an immediate feedback was available) might be deemed as preferable over a task less likely to do so (e.g., one with a delayed feedback or absent feedback altogether). In situations where several of the individual's goals were activated, it would be important to determine which one was dominant, and what means would be (subjectively) most likely to promote it.

Where two or more goals of near equal magnitude are activated, a multifinal means might be preferred over a unifinal means relevant to one of those goals exclusively (Kruglanski, Köpetz et al., 2013). Finally, where several equifinal means to a goal seemed available, or in a novel situation where possible means were unfamiliar to the actor, prediction of the behavior would be more uncertain than in a situation where a habitual means to the goal was available (see Figure 8). For instance, some individuals whose goal of *self enhancement* was situationally activated might pursue it by a habitual means (e.g., by demonstrating a well practiced skill, or by a careful grooming of one's appearance) whereas other persons may lack a specific self enhancement habit (cf. Wood & Neal, 2007) and hesitate between different modes of self enhancement (e.g., whether to appear knowledgeable, sensitive, athletic, or wise). Behavioral prediction may then be more assured in the former versus the latter case.

Coda

All things considered, predicting behaviors from attitudes toward objects or states of affairs is a precarious business fraught with complex contingencies. An attitude (or liking) toward an object is neither a necessary nor a sufficient condition for wanting the object in question; furthermore, wanting in and of itself need not produce goal commitment, which in turn may not drive any given behavior as a means of goal attainment. A more realistic approach to behavioral prediction may require familiarity with the individual's motivational make-up and with the motivationally relevant structure of the situation, including goals that the situation may activate and the means-ends configurations it may evoke.

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The Rocky Road From Attitudes to Behaviors: Charting the Goal Systemic Course of Actions

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