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On Motivational Readiness

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Abstract

The construct of *motivational readiness* is introduced and explored. Motivational readiness is the willingness or inclination, *whether or not ultimately realized*, to act in the service of a desire. Building on prior relevant conceptions which include, among others, animal learning models (Hull, 1943; Spence, 1956; Tolman, 1955), and personality approaches (e.g., Atkinson, 1964; Lewin, 1935), a general theory of motivational readiness is presented. Major parameters of this theory include the magnitude of a *Want* state (i.e., individual's desire of some sort), and the *Expectancy* of being able to satisfy it. The Want (W) is assumed to be the essential driver of readiness: Whereas some degree of readiness may exist in the absence of Expectancy (E), all readiness is abolished in the absence of desire (W). The concept of *incentive* is conceptualized in terms of a *Match* between the *contents* of the Want and perceived situational *affordances*. Whereas in classic models incentive was portrayed as a *first order* determinant of motivational readiness, it is depicted here as a *second order* factor which affects readiness via its impact on the Want and/or the Expectancy. A heterogeneous body of evidence for the present theory is reviewed, converging from different domains of psychological research. The theory's relation to its predecessors and its unique implications for new research hypotheses also are discussed.

On Motivational Readiness

"*Between the motion and the act … Between the desire and the spasm … Between the potency and the existence … Falls the shadow"* (T.S. Eliot).

Willing does not necessarily produce *doing*, and the road from awakened desire to concerted action often is tortuous: First, the desire itself might be fleeting and whimsical. An initial enthusiasm about a Caribbean vacation might be ephemeral and soon curbed by exigencies of workaday living. An impulse to splurge on a sports car, become fluent in French, or embark on an African Safari may give way to pressing concerns that ban dreamy fantasies from serious consideration. Secondly, even if powerful and persistent a desire might appear unrealistic. A romantic "crash" on a movie actor, the boss or the therapist may be quite intense and wrenching—yet its patent impossibility may forestall any concrete move toward its realization. A prisoner may ardently covet freedom yet see no feasible way of fleeing confinement, etc.

Obviously, willing is not irrelevant to doing, and often it does culminate in behavior aimed at the satisfaction of one's desire: A feeling of thirst may well prompt drinking, the feeling of hunger, eating, and an ambition for athletic attainment, the adoption of a tough training regimen. In short, wanting typically constitutes a *necessary*, yet an *insufficient* condition for intentional action. We call this psychological state of willing *motivational readiness*, and we define it as the inclination or tendency, whether or not ultimately consummated, to gratify some Want, whether implicit or explicit.

Our construct of motivational readiness refers to a core psychological phenomenon addressed by major motivational theorists, albeit under different labels. In this vein, Lewin (1935) described a state of *tension* "expressed by restless behavior" (pp. 94-95) and dissipating upon need fulfillment. Hull (1951) wrote of a "reaction potential" (sEr) that may lead to an overt

reaction, but it may also be so weak (or opposed by concurrent reaction potentials) that it produces no apparent reaction whatsoever. In like manner, Spence (1937) labeled as an "excitatory potential" (pp. 430-432) the tendency of the stimulus to evoke the response of approaching it. Atkinson's (1964) central phenomenon of interest was what he called the "*tendency* to act" (pp. 274-275), that is, again, a potentiality or a readiness to engage in a given behavior that may or may not take place after all.

The overriding interest on the part of major psychological theorists in (concepts akin to) motivational readiness isn't hard to fathom. This topic addresses the cradle of motivation and the quintessence of its inception. The ingredients of readiness and their interrelations are key to understanding how forces that determine action arise and what the motivational roles are of incentives and rewards. In what follows, we outline a general model of readiness formation and discuss convergent evidence for the model from diverse lines of psychological inquiry.

From Readiness to Action

The conditions under which motivational readiness translates into action have not been elaborated much by historic models of motivation, though Tolman (1955) mentioned the positive factors that increase performance [e.g., (magnitude of the) "need-push" (p. 319) and/or positive valence of the reward] and contrasted them with negative factors that decrease or undermine it (e.g., the need to avoid work, and the negative valence of the work that must be done, Tolman, 1955, p. 319). Lewin (1935), too, distinguished between driving and constraining forces, the former promoting the occurrence of a behavior, the latter reducing its likelihood. Beyond these preliminary treatments, we portray the transition from motivational readiness to *goal formation* in terms of a dual-threshold function of readiness magnitude and Expectancy. In turn, *Motivation Intensity* theory (Brehm & Self, 1989) and *Cognitive Energetics theory* (CET; Kruglanski,

Bélanger, Chen, Kopetz, Pierro, & Mannetti, 2012) address the contrasting forces that prompt the pursuit of goals, once these are formed. We revisit these notions at a later juncture.

Operationalizing Readiness

How can motivational readiness be assessed? Hull (1951) discussed "concrete reactions which must possess some objectively measurable …indication of the intensity of the tendency to perform the act. An obvious case of such an indication is seen in the intensity of struggling movements (in grams), or the amount of salivary secretion (in cubic centimeters) produced by hungry organisms when presented with not-quite accessible food" (p. 13). Pavlov's dog responding to a bell that serves as a conditioned stimulus (CS) for food (Pavlov, 1906) exhibits a readiness to eat, with magnitude of the dog's salivary response reflecting the degree of readiness. Zener (1937) summarized it as, "a ... reaction describable as looking for, expecting, the fall of food with a *readiness* to perform the eating behavior which will occur when the food falls" (p. 393, italics added). Lewin (1935, p. 95) inferred motivational tension from behavioral restlessness, as noted earlier.

Brain research could offer additional ways to measure readiness. Potentially relevant here is Libet, Gleason, Wright, and Pearl's (1983) notion of "readiness potential" (RP) defined as a sustained scalp-recorded negativity (ERP) that begins up to a second or more before a self-paced act. In these authors' 1983 studies, awareness of the urge to move occurred, on average, 300 ms before the onset of activity; in contrast, RP began at least 700 ms before the onset of activity (see also Haggard & Eimer, 1999; Wohlert, 1993). Libet's et al. (1983) results are supported by research based on other methodologies; their findings have been replicated using fMRI (Lau, Rogers, Haggard, & Passingham, 2004; Soon, Brass, Heinze, & Haynes, 2008), and the notion of readiness potential has been confirmed through research with single-cell recordings in monkeys

as well (Romo & Schulz, 1987). Finally, the use of *mouse technology* (Vallacher, Nowak, & Kaufman, 1994; Vallacher, Nowak, Froehlich, & Rockloff, 2002) to assess the dynamics of motivational readiness online could also be of use.

Where motivation readiness is translated into action, its magnitude may be gauged by intensity of *behavioral engagement*. Miller (1951, p. 91) described an experiment by Brown (1948) in which albino rats ran down a runway for food, or in order to escape shock. Each animal wore a harness connected to a recording device. When they were prevented from running at a single point in the runway, the strength of their pull could be measured. A monotonic positive relationship was found between strength of the animal's response tendency and strength of the pull, suggesting that both reflect motivational readiness.

Higgins (2012b, pp. 247-249) elaborated on the strength of activity engagement tapped by measures such as persistence on a task (i.e., time spent on the activity), and exertion (tapped, e.g., by arm pressure while working). Higgins (2012b) also furnished evidence that strength of engagement intensifies evaluative reactions (Cesario & Higgins, 2008; Higgins, Franks, Pavarini, Sehnert, & Manley, 2013), and hence that it can be partially inferred from magnitude of evaluative reactions, preferences and choices (Chun, Kruglanski, Sleeth-Keppler, & Friedman, 2011). Magnitude of motivational readiness may be also inferred from cardiovascular indices of effort expenditure on a task (in particular, heart rate, and systolic and diastolic blood pressure) but only *when* the task is manageable and sufficiently important (Wright, 1998). More work on the measurement of readiness seems in order.

A Theory of Motivational Readiness (MRT)

In what follows, we present our theory of motivational readiness. Our framework builds on prior motivational models and re-examines them in light of contemporary work on motivation.

Specifically, our theory may be regarded as a re-conceptualized version of classic formulations, buttressed by new advances in motivation science and aimed to uncover the "deep structure" of motivational readiness that transcends the paradigmatic specifics of prior conceptions.

Basic Concepts and Assumptions

Motivational readiness. By motivational readiness we mean a psychological experience of the willingness to attain a given state of affairs. Motivational readiness may be depicted as lying on a dimension of intensity or magnitude, from low to high degrees of readiness.

Determinants of motivational readiness. Major historical models of motivational readiness (or kindred concepts) have hinted at several similar factors assumed to jointly determine individuals' tendency to engage in motivated pursuit. Despite these deep commonalities, the classic models substantially differed from each other in outward appearance, according to the distinct conceptual idioms and research paradigms of the models' progenitors. Our analysis builds on the earlier formulations and it prunes and expands them. Specifically, we offer a more generalized, but also more refined version of notions inherent (explicitly or implicitly) in prior models, informed by contemporary motivational research.

We assume that motivational readiness is determined by an interaction of two essential ingredients: (1) Momentarily activated desire, or **Want**, (**W**), and (2) **Expectancy** that the **Want** can be gratified.[1] We consider these in turn.

The Want. By the Want construct we mean an outcome that a person, or an animal, desires at a given moment. It is generally agreed that the concept of *desire* represents the core of motivation. As Hobbes (1651) put it: "Life itself … can never be without *desire* …" (p. 49,

[1] According to the present analysis, the *duration* of a state of motivated readiness may vary. Some states of readiness may be relatively enduring (e.g., the readiness to consume a meal if food were to be found). Other states may be short lived, and overridden by competing considerations (e.g., the readiness to aggress against one's boss).

italics added). In our model, the Want notion includes all types of desires whether of the approach (e.g., food), or the avoidance (e.g., shock) type, regardless of their source, whether based on internal physiological deficits or broad psychogenic needs, and regardless of their modes of origination. In the latter vein, Lewin (1935, p. 87) discussed *induced forces* based on adult care takers' epistemic authority in the eyes of young children (see Kruglanski, Raviv, Bar-Tal, Raviv, Sharvit, Ellis, Bar, Pierro, & Mannetti, 2005): The adults proclaim certain objects in the environment to have positive or negative valence, and the children accept their pronouncements, and develop the corresponding *Wants* or *quasi needs* to approach or avoid the objects in question. Similarly, Murray (1938) discusses "environmental presses" that elicit actions from persons. Again, however, external presses are likely to activate internal *Wants* in individuals, just as do deprivation conditions in animal learning studies (e.g., see Hull, 1951), or semantic priming manipulations in social cognition experiments (see Bargh & Bandollar, 1996). In a gist then, the Want construct synthesizes concepts like motive, need, wish, drive or desire by identifying their common essence.

Wants may vary in their specificity or dimensionality. A hungry individual may desire food, but how much food and what kind may differ across persons and for the same persons across situations. In some instances, people might find a wide variety of foods appealing. In others they might be fussy and crave special types of food, e.g., sweets, steak, or pickles. In those circumstances, only those foods, and no others, would instill in them the readiness for action.

The contents and magnitude of the Want. It is useful to explicitly parse the Want concept into its two fundamental aspects: its *content* and its *magnitude*. Clearly separating these two aspects of a desire affords a more precise elucidation of the impact of given organismic and situational conditions on motivational readiness; as shown later, this proves to be especially

important in understanding the impact of incentives on readiness. Essentially, the content aspect pertains to *what* it is that the individual wants, and the magnitude aspect asks *how much* he or she desires it. In other words, the content aspect of the Want ($\mathbf{C_w}$) addresses the *genre* of the felt desire (e.g., to eat, drink, cooperate, acquire a luxury item, or other). In contrast, the magnitude aspect of the Want ($\mathbf{M_W}$)[2] refers to the *strength* of an individual's wish for the object of her or his desire.

The Want vector. The content of the Want ($\mathbf{C_w}$) may be formally represented by a set of numbers or a 'vector' (in the matrix-algebraic sense) whose elements depict the desire's characteristics on a number of relevant dimensions. At times, one might experience a relatively undifferentiated desire of some sort, say the wish to eat something, anything, recognized as edible. In such an instance, one may not care for a specific aspect of the food such as its temperature, its degree of gastronomic sophistication, the type of cuisine it represents, etc. In alternative instances, one might experience a more constrained desire, e.g., for something not only edible but also hot, not only hot but also flavorful, vegetarian, low in calories, etc. Because the content of the Want defines a vector, each of its elements may be characterized by a given *magnitude*, corresponding to the degree to which the individual cares for each of the dimensions of one's desire.

Expectancy. By Expectancy (**E**) we mean the *subjective probability* an individual assigns (consciously or unconsciously) to gratification of the Want. Expectancy may be determined by experience with specific actions that previously had satisfied the Want. Thus, a laboratory rat may follow an "if-then" rule whereby a given action may lead to given consequences. In the

[2] According to our CET (Cognitive Energetics Theory), the magnitude aspect isn't tantamount to the energy aspect, though it refers to mobilization of energy from a pool of resources (see Kruglanski et al., 2012).

(conditioning) example given by Holyoak, Koh, and Nisbett (1989), a laboratory rat may anticipate that "if a tone sounds in the chamber then a shock will occur..." (therefore crouching is indicated, p. 320). In a different example, a driver's specific knowledge may inform an Expectancy that turning the ignition key would start the engine, etc.

The foregoing instances represent cases where individuals trusted their own *epistemic authority* to derive expectancy from prior experience (Kruglanski et al., 2005), determining one's general or domain-specific self-efficacy (cf., Bandura, 1977). Often, however, expectancies may derive from information delivered by *external authorities*, adult care takers, teachers, or experts in various domains (ibid). In other words, expectancies may be based on social influence exerted by trusted epistemic authorities other than oneself.

Whereas reliance on own or others' epistemic authority refers to evidence-based Expectancy, a general proclivity toward *optimism* (e.g., Carver & Scheier, 2001; Scheier & Carver, 1985; Segerstrom, Taylor, Kemeny, & Fahey, 1998; Wrosch & Scheier, 2003) may constitute an alternative route to Expectancy. Indeed, there is ample evidence that even without experience with specific acts, or social influence from others positive outcome Expectancies (i.e., optimism) lead individuals to initiate or maintain behavior aimed to the satisfaction of an active motive state (Carver & Scheier, 1988).

Relations Among Readiness Components

Primacy of desire. Even though both Want and Expectancy influence motivational readiness, they are not functionally equivalent in their effects. The Want (desire) seems crucial and indispensible; Expectancy, though contributing to motivational readiness, isn't as essential. For instance, a starved individual may have a high degree of eating readiness though no food may be available, hence no Expectancy. A prisoner may crave freedom and be motivated to

pursue it, though the Expectancy of liberation may seem to be nil. The popular concept of "hopeless love" implies Want without Expectancy, as does Zajonc's (1980) famous thesis that "preferences need no inferences" (p. 151). Of interest too, is recent neuroscience work on motivation, which has focused exclusively on desire (its activation by environmental stimuli) and has been rather silent on Expectancy (cf. Berridge, Robinson, & Aldridge, 2009).

The role of Expectancy. In contrast to desire, Expectancy alone may not instill readiness, although given some desire it may amplify it. Like a magnifying glass that makes things seem closer, Expectancy makes Want satisfaction appear more (subjectively) realistic. The magnifying property of Expectancy received support in recent research by Higgins, Franks, Pavarini, and Manley (2013) in which a good tasting yogurt tasted better, whereas a bad tasting yogurt tasted worse, when the Expectancy of tasting it was high (versus low). In summary, Expectancy matters, and it may mobilize persons' energetic resources and channel them toward a given Want. Yet, at the end of the day, it is the Want that essentially drives readiness; in a manner of speaking, it is the "dog" that wags the "tail" of readiness, with Expectancy in an assisting role.

In other words, a combination of a high desire (W) and low Expectancy (E) is assumed to induce a higher level of motivational readiness than that of low Want and high Expectancy. For instance, an individual with a burning romantic desire for another, and a relatively low Expectancy of success, would experience a higher degree of motivational readiness than a person with low attraction to another and a considerable Expectancy of success.

Weighting the Want and Expectancy components. Granting the overall primacy of Wants over Expectancies, some people (or most people some of the time) may still over- or under-weigh either of these ingredients. In this vein, Shah and Higgins (1997) found that

prevention-oriented individuals are less affected by variation in expectations than *promotion-oriented* individuals. In a similar vein, Orehek, Mauro, Kruglanski, and van der Bles (2012) found that people high in the *locomotion* tendency give more weight to Expectancy considerations (that allow them to maximize movement) and less to value considerations; in contrast, individuals high on the *assessment* dimension give more *weight* ($\boldsymbol{w_W}$) to value considerations (related to Want magnitude, designated by **W**) and less weight ($\boldsymbol{w_E}$) to Expectancy considerations.

Formalizing the motivational readiness model. Consistent with the foregoing considerations, our *motivational readiness* model (MR) may be expressed formally as follows: MR = f(W, E). A more precise form of that function expressing the several assumptive properties of W and E is: (1a) $MR = W^{E+1}$, where 0 =< E =< 1; that is, where E (i.e., Expectancy) is conceptualized as a subjective *probability*.

The foregoing expression conveys the presumed primacy of W as a contributor to MR. Thus, if E = 0, MR = W, whereas if E = 1, $MR = W^2$, indicating that at both upper and lower bounds of E, MR is determined solely by W. As a special case, where W = 0, MR = 0 irrespective of the value of E, whereas where W > 0, MR is above zero as well. Finally, taking into account, the differential weighting of the W and the E discussed above, we have: (1b) $MR = w_W W^{w_E(E+1)}$.

Interdependence of Wants and Expectancies

In classic motivational models, the Want and Expectancy factors are typically portrayed as *independent* from each other. There is evidence, however, that they there are in fact *interdependent* and that each may partially determine the other under some conditions. Extant evidence suggests, furthermore, that the directions of these effects may vary according to

specific circumstances. In some cases, the W and E may be related positively;in other cases the relation may be negative.

Effects of Wants on Expectancies. ***(1) Positive impact.*** The notion that Wants determine Expectancies *positively* is implied by the familiar notion of "wishful thinking" supported by an appreciable body of research (e.g., Dunning, 1999; Kunda, 1990; Kunda & Sinclair, 1999). In the present context, the concept of wishful thinking suggests that the stronger the Want, the greater should be the Expectancy of its gratification. Direct evidence for this proposition comes from early research by McGuire (1960) in which participants rated both the probability and the desirability of each syllogism in a set being true. McGuire found evidence that the two sets of ratings were significantly correlated, consistent with the wishful thinking notion.

(2) ***Negative impact.*** The suggestion that Wants can have a negative impact on Expectancies under some conditions follows from research on defensive pessimism (Norem & Cantor, 1986). This work is based on the assumption that for some people at least, and for other people in some situations, importance of an outcome (e.g., the desire for academic success) lowers the Expectancy of success as a strategy for spurring individuals to greater effort.

Though originally defensive pessimism was envisaged as a stable dimension of individual differences related to the fear of failure (Ntoumanis, Taylor, & Standage, 2010), more recent work suggests that it can be induced by situational conditions as well. In this vein, Carroll, Sweeny, and Shepperd (2006) reviewed a number of empirical studies about pessimism and suggested that a higher Want for a given outcome may lead to greater pessimism--that is, lowered Expectancy of its attainment. For instance, participants shift from optimistic to pessimistic predictions of testing positive for a medical condition only when the consequences of having the condition are severe, (versus benign; Taylor & Shepperd, 1998). In another study,

students in one experiment were told that there had been an error at the school registrar's office and that 25% of students would be given an additional bill in the mail to make up for the error. Students were more likely to predict that they would receive the bill if they were financially in need (versus financially secure; Shepperd, Findley-Klein, Kwavnick, Walker, & Perez, 2000).

Effects of Expectancies on Wants. The interdependence between Wants and Expectancies appears to be reciprocal. Not only do Wants affect Expectancies, but Expectancies apparently also affect Wants. Again, there is evidence that the relation between Expectancies and Wants can be negative in some circumstances and positive in others.

(1) Positive impact. Recent evidence attests that Expectancies may have a positive impact on Wants such that the higher the Expectancy, the stronger the Want. Higgins et al. (2013) study referred to earlier supports this possibility. These researchers led undergraduates to believe that they would taste two yogurt flavors (labeled A or B), and then, in the second part of the study, they would try more concentrations within just one of these general flavor categories. In the *expressed high likelihood* conditions, participants were told either that they had an 80% chance of later trying more yogurt concentrations from A or that they had an 80% chance of later trying more yogurt concentrations from B. In the *expressed low likelihood* conditions, participants were told either that they had a 20% chance of later trying more yogurt concentrations from B or that they had a 20% chance of later trying more yogurt concentrations from A. Unbeknownst to participants, one yogurt category was pre-tested to be good-tasting (flavored with sugar and nutmeg), and the other yogurt category was pre-tested to be bad-tasting (flavored with clove).

In two experimental conditions, then, there was a high probability that participants would later try various concentrations of the *good* yogurt flavor— the 80% sugar and nutmeg condition, and the 20% clove (and thus 80% sugar and nutmeg) condition. In two additional conditions

there was a high probability of trying the bad yogurt (the 80% clove and 20% sugar and nutmeg conditions) Higgins et al. (2013) predicted and found that participants in *both* high expressed likelihood conditions (80% likelihood of the good yogurt later; 80% likelihood of the bad yogurt later) evinced stronger evaluative reactions (reflecting the desirability of the yogurts or their Want value) than did participants in the low likelihood conditions (the low expressed likelihood conditions (20% of the good yogurt later; 20% of the bad yogurt later). Specifically, the good yogurt *tasted better* and the bad yogurt *tasted worse* in the high versus the low likelihood conditions.

(2) Negative impact. The negative effect of Expectancy on Want has to do with the often-assumed relation between rarity (i.e., low Expectancy) and value (i.e., high desirability). Thus, Atkinson (1957) famously argued that the incentive values of achievement goals are highly dependent upon the subjective probability of success. In his words: "… the incentive value of success is a positive linear function of difficulty as inferred from the subjective probability of success" (p. 371). The greater the Expectancy of success (E), the lesser the positive value of success (W), illustrating a negative relation between the two.

Similarly, Commodity Theory (Brock, 1968) argues that scarcity enhances the value of commodities to be possessed. This notion has received consistent support in the marketing and consumer behavior literatures. Lynn (1991) offers a meta-analysis of empirical studies demonstrating the negative effects of abundance upon value, including research by Fromkin and Brock (1971), Lynn (1987), Szybillo (1973) and Worchel, Lee, and Adewole (1975). All of the aforementioned studies provide support for the notion that abundance (i.e., high Expectancy of attainment) decreases the perceived desirability of a commodity (hence lowering Want).

In summary then, there is plentiful evidence in the research literature attesting that the factors of Want and Expectancy are interdependent, although their exact manner of interdependence[3] (that is, the presence of positive or negative W on E effects or vice versa) may vary across cases.

Goal Formation

The fundamental ingredients of MR, W and E, closely resemble the *desirability* and *attainability* factors associated with the *goal* construct (Kruglanski, 1996, p. 600). It is important, therefore, to elucidate the way in which motivational readiness and goal formation are related. We assume that the dimension of motivational readiness is partitioned into two basic regions: a *pre-commitment* region and a *post-commitment* region. Dividing them is the *commitment point*, beyond which motivational readiness morphs into a goal that the individual "owns." Indeed, in everyday parlance, the goal concept implies *commitment* and *ownership*: "It is '*your* goal', '*my* goal', or '*their* goal,'" we commonly say, highlighting the *possession* aspect of goals. Similarly, Wikipedia defines a *goal* as "a desired result a person or a system envisions, plans, and *commits* to achieve" (italics added).

Below the commitment point, one may consider an object or a state of affairs *favorably*, yet not so favorably as to commit oneself to its attainment. It is a level of motivational readiness that characterizes what Gollwitzer (1990) called the *deliberation mindset*, wherein the individual has not quite decided whether or not to commit to a given goal. Beyond the commitment point, however, increases in motivational readiness translate into degrees of *goal magnitude*. For instance, though one may be committed to both tooth brushing, and ensuring the health of one's child health, the goal magnitudes in these two cases may be of different orders.

[3] Elaboration of this is beyond the scope of the present manuscript.

The dual-threshold model of goal commitment. As discussed above**,** we assume that the same factors, W and E, albeit at different levels, determine the extent of motivational readiness in the pre- and post-commitment regions. Specifically, the commitment point is conceived of as combining two critical thresholds: the W threshold, and the E threshold. In other words, to morph into a goal, it is incumbent that motivational readiness be at or beyond a given level of W, but also at or beyond a given level of E. Let GM represent goal magnitude, Th (W) the threshold of Want, and Th (E), the threshold of Expectancy. We thus have:

(2a) GM = g(MR), when MR≥ Th (MR) *and* E ≥ Th (E)

(2b) GM = 0, when MR< Th (MR) *or* E < Th (E)

For EQs (2a, 2b), we assume that g(MR) is a monotonic function, and both Th (E) > 0 and Th (MR) > 0. These notions are graphically represented in Figure 1 in which goal magnitude (GM) is graphed as a function of the two thresholds, namely Th (MR) and Th(E).

Figure 1 here

In this graph, GM is at a zero level, unless both the MR and the E are at above threshold levels.[4] The commitment point thus defines a point at which both the MR and the E values are at their threshold levels exactly. Beyond the commitment point, GM varies monotonically as a function of MR (as determined by both its W and E components).

Incentive

By *incentive* we mean a feature of the psychological situation, an object or a state, relevant to the individual's current Want.[5] As discussed later, the incentive concept has played

[4] Note that if MR is beyond threshold (e.g., because of a high value of W) but E is below threshold --no goal formation is assumed to occur (hence GM=0).

[5] The same feature when consumed becomes a *reward*. In a sense then, incentives exert their effects on motivational readiness *forward* inducing their anticipation by the organism, whereas rewards affect it *backward,* appropriately affecting learning and memory.

an important role in classic models of motivation. Because our theory substantially differs from its predecessors in its treatment of incentives, it is well to examine this construct in some detail. To do so, we first discuss a key ingredient of incentive, referred to as *perceived affordance*.

Perceived affordance. By perceived affordance (**PA**) we mean a perceived feature of the environment in which an individual is currently embedded. Almost any feature of the situation could be perceived as an affordance to some organisms in some circumstances: A pellet of food in the goal box, the sight of a restaurant, a car dealership, a lighthouse. Gibson (1979) defined affordance as follows: "[it is what] the environment ... offers the animal, what it provides or furnishes, for either good or ill … It implies the complementarity of the animal and the environment" (p. 127). Affordance, to Gibson, is the environmentally suggested possibility of gratifying one's need *if* such a need is present. A pellet of food (or a bunch of pellets) could satisfy an animal's hunger, a restaurant--a diner's gastronomic cravings, a car dealership--one's need for transportation, and a lighthouse--guidance to a wandering seafarer.

Whereas Gibsonian affordance is "objective," residing as it does in the external environment, *perceived affordance* admits both an external informational input and an internal input of schemas, motivations, etc. So, whereas according to Gibson (1979): "The affordance of something does *not change* as the need of the observer changes" (pp. 138-139), within the present framework, perception of an affordance may be partially determined by the individual's motivations. This may be especially so where the stimulus information is ambiguous (Dunning, 1999; Kunda, 1990) facilitating an interpretation of the situation as signaling the possibility of Want satisfaction.

In a gist then, perceived affordances are part of the *psychological situation* (Lewin, 1951), that is, the environment as subjectively experienced by the individual. Accordingly, they may or

may not be "real." A cake on a cafeteria counter might be real enough, as may the car on display at a dealership, or the food on the grocery-store counter. Other perceived affordances might be illusory: a *fata morgana* of a refreshing spring in a Sahara desert, an innocent smile taken as an invitation to romance, et cetera.

Perceived affordances have the potential to affect the subject's well-being "for either good or ill" (Gibson, 1979, p. 127). A perceived positive affordance is an environmental feature that a subject with a given need may find *appealing*, and a negative affordance one that he or she might find *repulsive* or *threatening*. Victory in an athletic contest, an alluring object at an art gallery, or a tasty meal at a gourmet restaurant may constitute positive affordances capable, when taken advantage of, of gratifying individuals' competitive, aesthetic, and gastronomic needs. A threatened loss of a dear possession, the prospect of severe pain, or a risk of failure or humiliation are negative affordances, that is, aversive potentialities whose actualization people typically seek to avoid.

The affordance vector. Like the Want states, perceived affordances possess a set of characteristics. A food may hold promise of providing a certain taste, texture, appearance, or quantity; a job may be perceived as promising a certain level of difficulty, prestige, pay, and responsibilities; a situation with a health risk may be characterized by the disease threatened, the likelihood of its contraction, etc. As with characteristics of the Want states, those of a given affordance may be conceptualized as a set of numbers, a numerical vector whose elements represent the dimensionality of that particular affordance, and its values on those dimensions.

Incentive = Match. To impact motivational readiness, perceived affordances should

correspond to the individual's momentary desires.[6] This means that *incentive value* depends on the degree of agreement between perceived situational affordance and the individual's Want. This point has been intuited well by past motivational researchers. Learning theorists implicitly assumed "that the goal object must be appropriate to the drive being manipulated; for example, food when animals are hungry, water when thirsty" (Weiner, 1972, p. 35). Atkinson (1964) explicitly stated: "Food has zero incentive value to a completely sated organism" (p. 283), and Lewin (1934) wrote that "the valence of environmental objects and the needs of the individual are correlative" (p. 78). Despite this awareness, however, the notion of correspondence between "valences" on one hand and "quasi needs" on the other (in Lewinian terminology) never found its way to various formal representations of motivational readiness; their explicit incorporation under the label of *Match* thus constitutes a distinctive feature of the present formulation.

Assessing Match. As presently conceptualized, Match (M) denotes a *degree of correspondence* between the contents of the Want and those of the perceived affordance. This notion is graphically represented in Figure 2. The left side of the figure contains a cylinder-like structure sliced into several horizontal parts. This depiction is meant to correspond to the Want and its various features (W1, W2, etc.). The right hand of the figure contains a similar figure representing the perceived affordance with its own features (A1, A2, etc.). The links connecting

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[6] Not all perceived affordances fulfill that requirement. One could perceive that a situation affords a satisfaction of a given Want without experiencing that particular Want oneself, and in fact while experiencing a different Want. In research by Higgins, Idson, Freitas, Spiegel, and Molden (2003b), participants with a *prevention* orientation in conditions affording the satisfaction of a *promotion* motive (a chance of improving one's outcome beyond the status quo), or participants with a *promotion* orientation in conditions affording the satisfaction of a *prevention* motive (a chance of avoiding a loss) perceived perfectly well the situational affordances (as attested by the appropriate manipulation checks) that did not correspond to these individuals' specific Wants.

the Want and the affordance structures represent the degree of Match, from complete absence of Match, indicated by an absence of a link, through a weak correspondence, denoted by a segmented line, to a strong correspondence, represented by a thick line.

Mathematically, the degree of Match may be represented by the *index of dependability* ϕ (Brenan & Kane, 1977; House, Dorfman, Javidan, Hanges, & Sully de Luque, 2014, p. 167) which values can range between 0 (representing a complete lack of Match) and 1.00 (representing a complete Match). Importantly, ϕ takes into account not only the degree of *correlation* between two sets of values (representing pattern matching) but also the match in their *magnitudes*, consistent with the present conceptual intent.[7] Finally, ϕ assumes positive values where the situational affordances are positive, and negative values when they are negative.

Figure 2 here

In essence, the Match parameter expresses the degree to which it appears situationally possible for individuals to get what they Want,[3] or to avoid that which they would rather eschew. We assume that Match contributes positively to motivational readiness. It captures what classical motivational theorists intended (without explicitly stating it) by the construct of *incentive*. For a positive perceived affordance, the extent of the contribution is a function of Match between what the individual wishes to attain and what seems available out there. For a negative affordance, the contribution is a function of the Match between what the individual wishes to avoid and the

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[7] $$\Phi = \frac{\sigma^2_{\text{dim}}}{\sigma^2_{\text{dim}} + \sigma^2_{\text{Match}} + \sigma^2_{\text{dim*Match}}}$$

Mathematically, σ^2_{dim} refers to dimensions on which the Want and the affordance are characterized, σ^2_{match} refers to the Want and the affordance categories, and $\sigma^2_{\text{dim x match}}$ represents the interaction between dimensions and Match. For a discussion of the index of dependability, see Brenan and Kane (1977); House, DeLuque, Dorfman, Javidan, & Hanges (2014, p. 167).

situational threat. For instance, a high degree of Match may exist for a student who dreaded failure on a math test and a test of considerable perceived difficulty, hence threatening failure.

Specific versus general Match. The present *Match* concept is related somewhat to Higgins' (2012b) notion of "fit." Higgins' "fit" notion refers specifically to *regulatory fit*: the degree of correspondence between a general goal pursuit orientation (e.g., promotion versus prevention foci, Higgins, 2012b, p. 24, or locomotion versus assessment modes, Higgins, Kruglanski, & Pierro, 2003a; Kruglanski, Thompson, Higgins, Atash, Pierro, Shah, & Spiegel, 2000; Kruglanski, Pierro, Mannetti, & Higgins, 2013) and the actual manner of goal pursuit.

Though consistent with Higgins' examples, the *Match* concept is assumed to apply beyond motivational orientations (like promotion versus prevention, or locomotion versus. assessment) and instead it is assumed to relate more broadly to all aspects and dimensions of the individual's Want in relation to pertinent perceived affordances. Higgins' "regulatory fit" is thus a special case of the present Match concept. In Higgins' work, for example, promotion-oriented individuals are assumed to want to approach activities in a promotion (eager) mode and prevention-oriented ones in a prevention (vigilant) mode. These aspects of their desire may or may not correspond to situational affordances, that is, to whether the situation (e.g., as created by the experimental instructions) permits a promotion or a prevention approach.

But in the same way that motivational *orientations* represent aspects of one's Want, the Want could contain multiple additional aspects as well that should enter into the determination of Match. For instance, one might crave a dish that was tasty, ample, and reminiscent of one's mother's cooking; to the extent that such a dish was indeed offered, one would be more motivated to consume it than a dish that echoed fewer aspects of one's desire (e.g., it was matched well in terms of taste and portion size, but not in terms of similarity to the mother's

cooking).

The impact of Match on motivational readiness. ***(1) Effects of Match on Expectancy***. We assume that Match between a Want and a perceived affordance enhances the Expectancy that the Want can be gratified: On seeing a chocolate cake being served at a birthday party, a chocoholic's Expectancy to fulfill her craving surely increases. Upon sighting a spring of water at an oasis, a thirsty wanderer's hope of being able to quench her thirst is boosted. Generally speaking, the presence of Match indicates that an object of one's desire is within reach. This removes the uncertainty concerning the location of the Match, and eliminates the necessity to engage in a search for a Match. Typically, this should heighten the Expectancy of Want satisfaction. The desired object is there for the taking, so the hope of satisfying one's desire should soar.

(2) Match and Want activation. Beyond the boost it may lend to the Expectancy (E) component of motivational readiness, a clear and present Match may activate the Want component as well and/or augment its magnitude. Common experience and contemporary research alike suggest awareness of an object relevant to one's desire may awaken it and bring it to the fore of consciousness. The sight of attractive food object (e.g., a tasty looking dessert), an item of clothing, or a new technological toy (e.g., a slick new tablet) may instantaneously arouse a desire for these objects even if one did not harbor such desire beforehand. The entire advertisement industry is premised on the theory that the visual representation of desired objects (i.e., a vicarious Match) would activate a corresponding desire (Want). In this vein, Snyder and DeBono (1985) looked at how individuals who were either high or low self-monitors responded to advertisements that highlighted either the product's image or its quality. High self-monitors (typically concerned with image) were willing to pay a higher amount for a product, suggesting

an activation of a more pronounced Want, when the ad appealed to image as opposed to quality.

In research by Stroebe, Mensink, Aarts, Schut, and Kruglanski (2008), participants were primed with food related stimuli; this activated their desire for food enjoyment. Van Koningsbruggen, Stroebe, and Aarts (2011) showed dieters a picture of either a neutral magazine or a magazine with a tasty dessert on the cover, in order to activate an eating enjoyment goal. A similar prime was also used in Fishbach, Friedman, and Kruglanski (2003, Study 5), in which participants were led into a room that contained magazines with pictures of tempting desserts on the cover; demonstrably, this activated their desire for fattening food.

The notion that incentives (Matches) impact motivation via their effects on Expectancy and Want is consistent with the *goal gradient* phenomenon whereby the individual is more highly motivated in closer (versus farther) proximity to the Match. The goal gradient phenomenon was originally observed in animal learning research, and it pertained to the replicable finding that: “Rats in a maze situation ... will run faster as they near the food box than at the beginning of the path” (Hull, 1943, p. 393). In present terms, proximity of the Match increases its salience for the actor and hence augments its motivational impact. Whereas the latter could be mediated in any number of ways, in a recent paper Liberman and Forster (2008) suggested, much in line with the present theory, that “the effect of distance [to the Match] on motivation depends on its effects on expectancy and value” (p. 516, parentheses added).

To sum up then, we propose that Match between a perceived situational affordance and a potential Want will *activate* the Want in question and/or *enhance the subjective likelihood* of Want satisfaction, i.e., the Expectancy component. We assume, therefore, that the contribution of incentives (Matches) to motivational readiness is *indirect,* flowing as it does via its impact on the Want and the Expectancy components rather than directly, over and above the W and E

contribution, as had been assumed by the classic models.

Match quest. According to the present theory, in the absence of a current Match between a Want and the perceived situational affordance, a *Match quest* will be initiated in which the individual will search for Match-affording situations in order to satisfy her or his desire. An individual who is strongly motivated in some regard, that is, has an appreciable degree of the Want factor, would likely seek a situation that contained relevant affordances: a hungry individual will seek a food store or a restaurant, and an individual whose car broke down would seek a car mechanic. In the realm of animal learning research, Amsel's (1958) experiments showed that if food was previously placed in a goal box, and then taken away on a subsequent trial, the animal actually runs faster on the trial following. This finding and others like it suggest that a lack of incentive does not engender motivational limpness, but instead instigates an effort to locate a Match-affording situation. These matters are discussed in more detail later.

Relations to Past Models

The present analysis has its roots in prior attempts by psychological theorists to identify the core determinants of motivated states. Our theory builds on those seminal insights and revises them in light of recent advances in motivation science. In particular, we incorporate two major types of revision: (1) *generalizations,* and (2) *refinements*. By generalizations we mean casting a broader conceptual net than heretofore and identifying the abstract constructs of which previously described factors are special cases. By refinements we mean changes in the assumed relations between those constructs and their functions as determinants of motivational readiness. We consider these in turn.

Generalizations

The Want. The present *Want* construct shares features in common with two historical

concepts in motivation theory, those of *drive* propounded by neo-behaviorists like Hull, Spence and Tolman, and of *motive* featured in formulations of personality theorists like Atkinson, McClelland and their associates. All three constructs refer to *internal* states of the behaving subject, and all three possess a *magnitude* dimension: A drive can be of a given strength (e.g., depending on the extent of prior deprivation), a motive disposition (e.g., for achievement) can vary in intensity across persons, so can a Want (e.g., a craving for an evening's rest may differ in magnitude from the desire to save a child's life). Beyond these commonalities, however, the Want construct differs substantially from drive and motive notions.

Drive and drives. For Hull (1943) and Spence (1956), drive represented a "nonspecific energizer of behavior" (Weiner, 1972, p. 33), thought to lack any directive properties. As Brown (1961) put it: "*Drive* is assumed to have only motivational effects and *habit strength* only directive functions" (p. 59). In contrast, the Want concept has both motivating and directive properties, the latter being central to the notion of Want *contents* ($\mathbf{C_w}$) that represent *what it is* that the individual desires.

Because in the Hull-Spence formulations drive represents a general pool of energy, arousal of a need (say thirst) *unrelated* to the motivational condition (say hunger) under which a response was learned should augment the strength of that response. Though early studies (specifically, Kendler, 1945; Webb, 1949) appeared to support this notion (of irrelevant drive), subsequent analyses questioned their conclusions on empirical and theoretical grounds (Estes & Johns, 1958; Grice & Davis, 1957; for a recent critique see Higgins, 2012b, pp. 20-21).

In the present model, motivational readiness indicates a tendency to *mobilize* energy from a finite and depletable pool (Kruglanski et al., 2012). An increased magnitude of a given Want entails an increased readiness to commit resources to its satisfaction, and a decreased

commitment of resources to alternative Wants. Indirect evidence for this possibility has been furnished in studies on "goal shielding" (Shah, Friedman, & Kruglanski, 2002), wherein increased commitment to a given focal goal resulted in an inhibition of alternative goals, and in studies on "goal pull" (Shah & Kruglanski, 2003), wherein increased commitment to an alternative goal decreased commitment to a focal goal. These (fixed sum) results seem inconsistent with the notion that a drive prompted by a given need (say hunger) fostering a given goal (of food consumption) will energize behaviors unrelated to that goal and deemed to serve alternative goals (say of exercising, or of solving mathematical puzzles).

Tolman (1949) discussed the notion of *drives* (as opposed to drive) defined as "propensities to perform a characteristic type of consummatory response" (p. 362); this conception endows them with directional properties, closer to the Want concept as presently portrayed. Nonetheless, both drive (as propounded by the Hull-Spence-Brown model) and drives (as proposed by Tolman) bear an essential relation to physiological needs, whereas the Want concept refers to any kind of desire, whether or not based on a tissue deficit of some sort.

Admittedly, only "primary drives" were assumed to directly stem from tissue deficits. To account for motivations seemingly unrelated to physiology, behavioral theorists introduced the notion of "secondary drives" assumed to acquire their motivating powers through association with primary drives (Hull, 1951, p. 25). Yet, the secondary drive accounts of non-physiologically motivated behaviors have been questioned. Weiner (1972), for instance, expressed doubts that people's motivation to earn money necessarily derives from its prior association with expected hunger. As he put it: "It is unlikely that many readers…have experienced any prolonged absence of food while most have held jobs. The drive conception is quite limited in the extensity of the behavior that is amenable to explanation" (p. 86).

Motives. Atkinson (e.g., 1964) carried out seminal work on a psychogenic (versus a physiological) conception on motivation based on the concept of motivational dispositions. Somewhat akin to Tolman's *drives*, and to our notion of *Wants*, Atkinson's motivational dispositions too were assumed to possess a directional function. Specifically, according to Atkinson: "M_g represents the strength of a relatively general and stable disposition of the person which refers to a particular class of goals (G)" (p. 275).

Yet, the dispositional *stability* that characterizes Atkinson's motivational conception isn't necessarily presupposed by the Want concept. On this view, Wants can be instigated by situations as well. As noted earlier, a Match between a perceived affordance and a (latent) Want (that is, the situational incentive) could activate it. In other words, Wants may be activated for most persons exposed to a given situation, rather than being differentially and stably associated with different persons. Indeed, the notion of Want activation affords a way to distinguish major motivational models from each other. We address this issue next.

Want activation. The concept of *Want activation* implies a latent capacity that can be put into effect, a potential that can be realized. Simply, organisms must have the ability to experience different Want states: Otherwise, no activation of those states would be possible. Humans are hard-wired to experience various physiological and psychogenic needs, and socialization and acculturation contributes to the kinds of things we are capable of Wanting. For instance, contemporary humans are capable of Wanting a variety of consumer products (e.g., cars, electronics, computers) that people in other periods or cultures couldn't dream of, etc.

Different conceptual paradigms for the study of motivation identified different conditions for the activation of Wants. The neo-behaviorist notion of drive (or drives) referring to universal *physiological* needs (for nutrition, sex, rest, etc.) implies activation by situationally produced

deficits (e.g., hours of food or drink deprivation). In contrast, as just noted, Atkinson's (1964) personality oriented motivational model addresses "characteristics of the personality [assumed to] have their origins in early childhood experience" (Atkinson, 1966, p. 13; parentheses added), and to represent "relatively general and stable dispositions" (Atkinson, 1964, p. 275). Indeed, Atkinson's approach to empirical research on his model has consisted of assessing the M_g via the Thematic Apperception Test (TAT) as a measure of stable individual differences in motivational propensities. According to Atkinson (1966): "The motive-disposition is presumed to be latent until aroused by situation cues which indicate that some performance will be instrumental to [its satisfaction]" (p. 12; parentheses added).

The recent cognitive paradigm of motivation (e.g., Bargh & Ferguson, 2000; Kruglanski, 1996) implies additionally that (human) Wants can be activated through stimulation of their semantic associates. In last decades, numerous priming studies which were carried out have been consistent with that idea. For instance, in the seminal work by Chartrand and Bargh (1996), participants were primed with either an *impression formation* goal[8] (through words like opinion, personality, evaluate and impression), or with a *memory goal* (through words like absorb, retain, remember and memory). In an allegedly unrelated second experiment, they read a series of predicates describing behaviors suggestive of different personality traits (social, athletic, intelligent and religious). Participants were then given a surprise recall test. Those primed with the goal of impression formation clustered their recall more than did participants primed with the goal of memorization, just as did participants in the classic Hamilton, Katz, and Leirer (1980) study (cited in Chartrand & Bargh, 1996) whose corresponding goals were induced via explicit motivational instructions.

[8] We interpret here the popular notion of "goal priming" as an activation of a *motive state* or a "Want" as presently discussed.

In a different study, Bargh, Gollwitzer, Lee-Chai, Barndollar, and Trotschel (2001) primed participants (via a word search task) with achievement related words (succeed, strive, attain, achieve) or with cooperation words (helpful, support, honest, cooperative, friendly). Both types of priming led to goal relevant behaviors (greater achievement, greater cooperation) on a subsequent task without the participants' exhibiting awareness of the relation between the priming and the performance tasks. Numerous additional studies have obtained similar results: unconscious goal activation via semantic priming leads to goal pursuit and to appropriate emotional reactions, depending on whether the pursuit went well or poorly (e.g., Shah & Kruglanski, 2002, 2003; Shah, Kruglanski, & Friedman, 2003).

Relatedly, as mentioned earlier, a *Match* between perceived affordance and a latent Want can serve to activate it; for instance, the work of Berridge (e.g., Berridge & Aldridge, 2008; Berridge et al., 2009) shows that a present situational cue (e.g., the sight of a needle for a drug addict) can trigger a sudden motivational urge to pursue a particular goal.

In summary, the present concept of Want is broad and comprehensive. It includes physiological needs like hunger, thirst, or sex, highlighted by neo-behaviorist theorists, and also chronic individual differences in motivational inclinations, addressed by personality theorists. But it equally pertains to situationally activated "quasi-needs" identified by Lewin (1951) or semantically primed "wants" like the desire to cooperate, or to compete in given circumstances (e.g., Bargh et al., 2001).

None of which is meant to suggest that physiological needs, personality inclinations and situationally primed Wants are similar in all regards. Obviously, they differ in numerous respects, like the manner of their activation, the phenomenology of their experience, or their applicability to different types of subjects (e.g., though animals have physiological needs, and arguably

exhibit individual differences in various propensities, most are presumably immune to semantic priming). Despite their many differences, however, these various sources of *Want* may fulfill the same role in fueling motivational readiness: Their *magnitude* and *contents* define the extent and focus of such readiness (see Equation 1); in this respect, at least, different bases of Wants can be treated as *functionally equivalent*.

Expectancy. In one form or another, the concept of *Expectancy* is implicit in major motivational models. Although neo-behaviorists like Hull and Spence shunned cognitive ("mentalistic") terms like 'expectancy' and banned them from their formulations, the concept of Expectancy is nonetheless implicit in the key concept of S-R linkage and its contingency on reinforcement. In other words, the organism may anticipate that given the stimulus S, response R will bring about reinforcement, that is, satisfaction of the Want. If reinforcement was discontinued, and the subject's anticipation was disconfirmed, *extinction* would take place, and the response previously followed by reinforcement would no longer be performed. This analysis forms the core of Tolman's (1932) expectancy hypothesis (see also Bolles, 1972). In his sign-significate theory, a given stimulus serves as a sign, evoking an expectancy that a given act will prompt need satisfaction. As Tolman (1934, in Kimble, 1961) put it: "A sign-gestalt sets the animal to 'expect' that when he actually behaves this field feature will lead by *such and such behavior* route to that field feature" (p. 29), that is, to the reward. A similar view was articulated by Rotter (1966). Specifically: "A reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future. Once an expectancy for such a behavior-reinforcement sequence is built up the failure of the reinforcement to occur will reduce or extinguish the expectancy" (p. 2).

Ample recent research also suggests that generalized Expectancies may derive from

individuals' lay theories or *mindsets* (see Dweck, 2006, for review of the relevant literature) whereby improvement (e.g., of one's intelligence, performance, etc.) is perennially possible (in an *incremental* mindset), or is not, where the attributes in question are deemed to be fixed and immutable (in an *entity* mindset). Importantly, a mindset may be induced by pronouncement of an esteemed *epistemic authority* (e.g., a scientific article) that improvement of one's capabilities is or is not possible (Kruglanski et al., 2005). As with all beliefs then, subjective likelihoods (expectancies) of Want satisfaction are subject to social influence by trusted communicators.

Expectancy for what? Following Tolman, Atkinson defined Expectancy in terms of a specific act (such and such behavior). Accordingly, he wrote of "the strength of expectancy that [an] act will be followed by a particular consequence" (Atkinson, 1964, p. 276). Treating the *specific act* as the referent of the Expectancy links the motivational readiness to performance of *that act*. In the present conception, by contrast, the Expectancy is linked to the particular *Want* and the individual's assuredness of being able to gratify it (by whatever means). Such Expectancy may derive from one's overall level of optimism defined as "generalized outcome expectancies" (e.g., Scheier & Carver, 1985; Carver & Scheier, 2001; Rotter, 1966; Segerstrom et al., 1998; Wrosch & Scheier, 2003), one's general lay meta-theory or mindset (Dweck, 2006), one's situation-specific optimism affected by preceding outcomes of one's endeavors, one's feelings of self-efficacy (Bandura, 1977) in the particular domain of the Want in question, and the apparent difficulty of gratifying that Want in given circumstances (Vroom, 1964).

Refinements

Beyond its generality, there are two major ways in which the present theory is distinct from its predecessors: (1) It postulates a different relation between the Want and the Expectancy factors than do the classic models; (2) It offers a different perspective on the role of incentives in

motivational readiness. We examine these in turn.

The Want-Expectancy relation. The classic models generally assumed a multiplicative relation between the (conceptual proxies of) the Want and the Expectancy factors. In Hull's (1951) theory, "reaction potential" E is assumed to be a *product* of drive (D), habit (H), and incentive (K): (E = D x H x K). In Spence's (1956) variant, "excitation potential" (E) is determined *multiplicatively* by habit (H) and the summation of drive (D) and incentive (K): [E = H x (D + K)]. And in Atkinson's (1964) model, the "tendency to act" (Tr,g) is expressed as a multiplicative function of motive (Mg), expectancy (Er,g; that a given behavior will lead to motive satisfaction) and incentive (Ig): (Tr,g = Mg x Er,g x Ig).

All the foregoing formulations treat the Want and the Expectancy factors as functionally equivalent determinants of motivational readiness. Specifically, both the Want and the Expectancy factors are deemed indispensible to readiness in that setting *either* to zero completely eradicates readiness as well. In contrast, the present theory assigns different roles to these two factors. Though both are assumed to contribute to readiness, only the Want factor is considered quintessential, whereas the Expectancy factor is not. As noted earlier, our theory allows a possibility for motivational readiness even where Expectancy of Want satisfaction is absent. In contrast, if the desire (Want factor) is gone, no amount of Expectancy would suffice to rekindle one's extinguished readiness.

The role of incentives in motivational readiness. Another major difference between the present theory and prior motivational formulations resides in the treatment of the *incentive* construct. In that regard, our distinction from the classics is *threefold*. First, major prior models treated incentives as independent of the Want states. In contrast, as noted earlier, we assume incentive value to derive from a Match between perceived situational affordances and Want

states. Second, Hull's (1951; E = D x H x K), and Atkinson's (1964; Tr,g = Mg x Er,g x Ig) models assumed incentives to be indispensible to motivational readiness. In contrast, we assume that motivational readiness can exist in the absence of incentives, in which case a Match quest would be initiated. Third, the classic models treat incentive as a *primary* source of contribution to motivational readiness, at the same level of analysis as Want and Expectancy. In contrast, we assume that incentives (Matches) constitute a *secondary* source of contribution to readiness, working their influence *indirectly* via their impact on Expectancy and/or Want.

1. Incentive and Match. The concept of *incentive* highlighted in prior formulations (e.g., of Atkinson, 1964; Hull, 1943, 1951; Spence, 1956; Tolman, 1955) referred to a feature of the situation of potential motivational relevance to the individual. In the Hull-Spence perspective, incentive has been portrayed as independent of drive (e.g., the amount of food in the goal box was assumed to constitute an incentive, whereas the drive was assumed to be hunger-based and to be induced by hours of food deprivation). In Atkinson's (1964) formal model too, incentive (Ig) was defined independently of the motive state (Mg) and said to "represent ... the value of that particular goal (g) relative to other goals of that class" (p. 275). He also defined incentive internally in terms of the positive emotion such as pride in accomplishment expected to occur upon realization of the affordance (Atkinson, 1964, p.282). Again, in Atkinson's formulation the comparison seems to be between degrees of emotional reaction (e.g., degree of pride) in a given situation as compared to other possible situations.

The traditional view of incentive as part of the external situation (exemplified by food in the goal box) or, as in Atkinson's (1964) portrayal, as the perceived consequence of acting on the external situation (e.g., succeeding at a task) conveys its conceptual affinity to the construct of perceived affordance described earlier. But, according to the present theory perceived

affordances acquire incentive value only when they *Match* the individual's momentary desires (i.e., Wants).

2. Are incentives essential to motivational readiness? In prior motivational models, notably those of Hull (1951) and Atkinson (1964), incentive is essential to motivational readiness: In those models, incentive multiplies the Expectancy and Want factors in determining readiness, and setting it to zero obliterates motivational readiness as well.

Spence's model (of excitatory potential) in which incentive is *added* to drive to be jointly multiplied by habit notably escapes the problem in allowing motivational readiness to occur in the absence of incentives. The difficulty, however, is that Spence's formulation allows incentives to determine motivational readiness even in the absence of (need based) drive (i.e., when drive = 0, the behavior would still be driven by the product of incentive and habit!). This feature of Spence's model has the somewhat incoherent implication that behavior would occur without a motive state being present. In contrast, the present formulation assumes that setting the motive state to zero (W = 0) would eliminate motivational readiness no matter what the situation may afford. For instance, a completely *sated* individual or animal would not exhibit motivational readiness to engage in food attaining activities regardless of the amount and/or kind of the food incentive (Karsten 1927; Koch & Daniel, 1945; Lewin, 1951). Recent work on goal priming offers consistent support for this notion: numerous studies have shown that participants respond to primes *only* when a corresponding motive state is also present (Bermeitinger, Goelz, Johr, Neumann, Ecker, & Doerr, 2009; Karremans, Stroebe, & Claus, 2006; Strahan, Spencer, & Zanna, 2002). If no motive exists, behavior will not be initiated.

In contrast to models (Hull's and Atkinson's) that view incentive as indispensible to motivational readiness, we envisage an appreciable amount of motivational readiness in the

absence of Match. As noted earlier, according to the present theory, the absence of a current Match may engender a motivational readiness to leave the situation and seek out others that promise a Match. These phenomena are encapsulated under the concept of Match quest, which we referred to earlier.

3. Incentives as a secondary source of readiness. In prior models, incentives are portrayed not only as *essential* contributors to readiness but also as *primary* contributors over and above the Want and Expectancy factors. In contrast, the present theory suggests that the contribution of perceived Match (i.e., incentive) is *secondary*, exerting its effects on readiness *via* Want activation, and/or Expectancy enhancement. As noted earlier, the perception of a situational affordance that Matches a latent Want could activate it (a chocolate cake in a bakery's window could activate one's craving for sweets, an advertisement for an exotic vacation could activate a desire to "get away from it all"). Similarly, the perception of a present situational Match could signal that Want satisfaction is within reach, thus boosting the Expectancy of satisfaction. Thus, Match does not add strength to motivational readiness beyond that which accrues from its contributions to Want and Expectancy.

An important implication of this analysis is that Match (i.e., incentive) *does not* have a special role in the determination of motivational readiness. Because its influence on readiness is via its impact on Want and Expectancy, its causal status in this regard is similar to other determinants of those factors, such as deprivation of a basic need, semantic priming that affects desire (W) and/or own experiential history (with given outcomes), or genetic and social influence factors (affecting one's beliefs) that affect Expectancy (E).

In a Gist

Our theory depicts a continuum of *motivational readiness* that, beyond a *commitment*

point, translates into *goal magnitude*. Intensity of motivational readiness is assumed to be determined by two general parameters: the degree of desire for a given outcome, referred to as Want (W), and the Expectancy (E) of Want satisfaction. Of the two, we assume the (W) to be the quintessential ingredient of readiness that is qualified by the E factor. Accordingly, whereas some motivational readiness may exist in the absence of Expectancy (of Want satisfaction), no readiness will be present in the absence of desire (W).

Moreover, the concept of *incentive*, included in classic models as a core contributor to motivational readiness, is presently conceived of as a Match (M) between the contents of a current Want (C_w) and those of a perceived affordance (PA). Thus, the power of incentives to affect readiness is assumed to depend on the degree of Match. Unlike the classical models, however, the present theory assumes that incentives (or Matches): (1) Aren't essential to motivational readiness, because in their absence a Match quest would be initiated; (2) Affect motivational readiness indirectly, as a (non-unique) second order factor, via influence on the Expectancy and Want determinants of readiness.

These notions are graphically represented in Figure 3. As may be seen, Want and Expectancy affect motivational readiness directly, as first order factors, with the Want playing a more important role in this regard than does Expectancy. Furthermore, the W and E factors are assumed to be partially interdependent (represented by the bidirectional arrows). Finally, Match (incentive) is assumed to affect readiness *indirectly* and so are other possible determinants of Wants (e.g., deprivation, priming) or of Expectancies (e.g., experiential history, trait optimism, social influence).

Figure 3 here

Distinctive Empirical Contributions

Ultimately, the value of any novel theoretical proposal must be gauged in reference to its predecessors. In this vein, we elaborate in the present section on the relative explanatory advantages of the present theory and its unique generative potential beyond past formulations. Specifically, our theory accounts for a *range* of phenomena that no *isolated prior model* could address, as well as for phenomena that prior models *taken as a body* are not fit to explain. We consider these in turn.

Specific Model Comparisons

Through its focus on the deep structure of motivational phenomena, the present theory is capable of integrating prior notions by identifying their common gist. This signifies an explanatory advantage relative to *isolated* prior formulations. For instance, the neo-behaviorist conception of *drive* (e.g., in Hull's and Spence's models) seems limited to motivations rooted in (or derived from) tissue deficits of some kind, whereas the present concept of Want encompasses any type of desire, irrespective of its origin. The ample empirical research on motives unrelated to physiological deprivations (e.g., the work on the need for closure, Kruglanski, 2004; Kruglanski & Webster, 1996; Kruglanski, Pierro, Mannetti, & De Grada, 2006; need for cognition, Caccioppo & Petty, 1982; the need to belong, Baumeister & Leary, 1995, and many others) thus poses a challenge for strictly neo-behavioristic formulations.

A different challenge to the latter models lies in the conception of *habit*, and especially in the assumption that its development requires an extended history of reinforcement. In the present theory, consistent with Tolman's (1955) work, we interpret the S-R connection as an *Expectancy* that in a given stimulus situation a given response would lead to a reward (see also Holyoak et al., 1989). But unlike the behaviorist postulate that habit (or Expectancy) develop continuously as a function of repeated pairings of a response and a reward, the present notion of Expectancy

eschews such historical constraint and allows that Expectancy be established instantaneously through communication with a trusted "epistemic authority" (Kruglanski et al., 2005)[9], or indeed be the result of genetic (Plomin et al., 1992; Schulman, Keith, and Seligman, 1993) and socialization factors (Eshun, 1999; Fischer & Chalmers, 2008; Heinonen et al. 2006) that produce trait optimism.

Unlike the behaviorist formulations, Atkinson's (1964) psychogenic model isn't tied to physiological drives as unique sources of motivation; yet its emphasis on stable individual differences in motivation obscures the possibility of situational motive activation, e.g., via semantic priming (Bargh et al., 2001; Fishbach & Ferguson, 2007); notably, the latter possibility transcends also the behaviorist notion of drive activation through a physical deprivation of some kind (e.g., food or water deprivation in laboratory animals).

Finally, the notion of expectancy in Atkinson's (1964) model and in Tolman's (1955) purposive behaviorism pertain to a *specific act* anticipated to result in reward, whereas the present concept of Expectancy is broader, encompassing as it does general optimism and a sense of self-efficacy. The ample evidence that the latter have significant motivational impacts (e.g., Bandura, 1977; Carver & Scheier, 1985; Carver & Scheier, 2001; Dweck, 2006; Rotter, 1966; Segerstrom et al., 1998; Wrosch & Scheier, 2003) poses difficulty for the specific-expectancy models.

In summary, though different past models can account for specific findings that challenge other models (e.g., Atkinson's concept of psychogenic motives is able to explain motivational phenomena unrelated to physical deficits, whereas the neo-behavioristic models of Hull and

[9] By now there is considerable evidence that Expectancies can be established in such a manner, for instance via exposure to an authoritative communication (alleged scientific article) that X leads to Y (e.g., that exercising one's mind improves one's intelligence, cf. Dweck, 2006).

Spence can account for situational motive activation, via deprivation, incompatible with the stable motivational states highlighted by Atkinson), the present, integrative, theory is capable of accounting for both types of phenomena via the breadth of its pivotal constructs of Want and Expectancy.

Beyond Prior Models

Of greater interest are the empirical implications of the present theory, and corresponding evidence that poses a challenge to prior motivational models taken as a whole. In this category we consider evidence that: (1) The incentive value of perceived affordances is proportionate to their Matches with current Wants; (2) Match affects motivational readiness indirectly (rather than directly) via its impact on Want and Expectancy; relatedly, (3) The absence of current Match does not obliterate motivational readiness but rather instigates a Match quest; and finally, (4) Contrary to prior presumption, the Want and the Expectancy factors are only quasi (rather than fully) independent and they may causally affect each other under some conditions.

(1) ***Matches with current Wants.*** As noted earlier, classic models formally conceptualized incentives as independent of Wants. This is particularly striking in reference to the neobehaviorist models that conceptualized drive (i.e., the proxy of Want) in terms of its *magnitude* only, neglecting its *content*. Accordingly, the particular *sources of drive* were assumed not to matter (Brown, 1961) but rather to combine for a total amount of drive. Strictly speaking, such conceptualization suggests that no matter what the content (or source) of the Want (drive) may be, the incentive would affect motivational readiness in exactly the same way. That possibility was strongly doubted by Maslow (1943) who wrote: “For the man who is extremely and dangerously hungry, no other interests exist but food. He dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food and he

wants only food ... The urge to write poetry, the desire to acquire an automobile, the interest in American history, the desire for a new pair of shoes are, in the extreme case, forgotten" (p. 374).

Beyond such intuitive insights, experimental evidence from diverse domains of psychological research suggests that *Match* between Wants and Perceived affordances augments motivational readiness. Pessoa (2013) reviews evidence that the presence of *reward* (i.e., a situational affordance that *Matches* a Want) sharpens executive functions and thus enhances performance on tasks requiring working memory, task switching, response conflict, and long-term memory (e.g., Kobayashi, Lauwereyns, Koizumi, Sakagami, & Hikosaka, 2002; Watanabe, 1996). According to Pessoa (2013), the presence of a reward fosters a reallocation of resources to prioritize implementation of the rewarded task components at the expense of unrewarded ones (Padmala & Pessoa, 2010).

In research by Higgins and his colleagues on regulatory fit, *promotion*-oriented individuals were found to be more engaged in an activity, and to assign higher value to an object if they approached it in a *promotion* mode, and *prevention*-oriented individuals, if they approached it in a *prevention* mode. In a seminal study on fit (Higgins et al., 2003a), participants chose between an attractive Columbia University mug, and a less attractive pen. All participants chose the mug as expected, but the value they assigned to it varied in accordance with their regulatory focus orientation and the way they were led to approach the choice: Promotion-oriented individuals in the promotion condition ("think about what you would gain by choosing the mug") and prevention-oriented individuals in the prevention condition ("think about what you would lose by not choosing the mug") assigned considerably higher value to the mug than did promotion-oriented individuals in the prevention condition and prevention-oriented individuals in the promotion condition. These and other findings (Higgins, 2000, 2005), suggest

that the overall hedonic intensity of behaviors, and the evaluation of events and objects, is a function of the perceived fit between a specific behavior, event, or object, and individuals' regulatory focus, as well as regulatory mode (Higgins et al., 2003b; Kruglanski et al., 2000; Kruglanski et al., 2013). Such experience of fit, or "feeling right" about what one is doing, arises when the manner of people's engagement in an activity sustains (rather than disrupts) their goal orientation or interests regarding the activity (Aaker & Lee, 2006; Cesario, Higgins, & Scholer, 2008; Higgins, 2005; Pham & Higgins, 2005).

Scholer, Zou, Fujita, Stroessner, and Higgins (2010) found that in situations involving loss, participants with a *prevention* motivation (i.e., ones whose Want state was to eliminate a loss) but not those with a *promotion* motivation (i.e., whose Want was to effect a gain) selected a risky option seen as capable of bringing them back to the *status quo ante*. In a different set of studies, Zou, Scholer, and Higgins (in press) found that participants with a *promotion* motivation, but not those with a *prevention* motivation (when stuck in the no gain rut) elected the risky option that promised to elevate their outcomes above the status quo. These findings indicate that a risky option has incentive value only when it Matches individuals' Want state and not otherwise.

Extensive evidence concerning the impact of Match on motivational readiness comes from Industrial-Organizational (I/O) psychology. In the I/O realm, person-job (PJ) fit is often defined as the Match between a person's motivationally relevant Wants and the work requirements. In this vein, Kristof, Brown, Zimmerman, and Johnson (2005) stated that a "*form of PJ fit occurs* when *employees' needs, desires, or preferences are met by the jobs that they perform*" (pp. 284-285, italics added). Studies show that such person-job fit is associated with better job performance (Caldwell & O'Reilly, 1990) and more overall career success (i.e., higher

salary and job level; Bretz & Judge, 1994), both widely assumed to be mediated by the motivation for work.

There is also suggestive evidence that Match is a matter of degree, and that the greater the Match, the stronger the motivational readiness. Webb (1949) trained rats to make a response to get food, then tested how fast this response would extinguish when animals were under different degrees of *water deprivation*. The extinction of the response was a function of hours of deprivation, such that animals made a larger mean number of responses to get food when they were increasingly thirsty. But here is the point: The mean number of responses under 22 hours of *water* deprivation was only 7.2 responses, whereas the mean number of responses under 22 hours of *food* deprivation was 14.2, nearly twice as much. Because hunger and thirst share proprioceptive cues -- food shares commonality with drink, for *thirsty* rats, food ("expected" to follow the learned response) may have constituted a partial Match that motivated them somewhat, though not as much as it did for *hungry* rats, for whom the Match was greater.

Indirect evidence for effects of an affordance vector that Matches multiple aspects of one's motive state (or Want) is furnished by recent research on the *multifinality* configuration (Kruglanski, Kopetz, Belanger, Chun, Orehek, & Fishbach, 2013), representing the case wherein a single activity (means) promises to advance the attainment of several goals. In contrast, a *unifinal* activity promises to advance a single end only. From the present perspective, multifinality (versus unifinality) represents greater Match in that it extends the possibility of gratifying multiple aspects of one's Want state. The growing evidence that multifinal means often are preferred over their unifinal counterparts (see Kruglanski et al., 2013, for a review of the relevant research) suggests that Match indeed augments motivational readiness and its expression in activity preferences.

(1a) ***Perils of mismatch***. Unilaterally focusing on a *perceived affordance,* while neglecting its *Match* to a current Want, runs the risk of miscalculating the motivational impact of the affordance and inappropriately universalizing it to persons, contexts or cultures wherein the Match is absent. Indeed, there is ample cross-cultural evidence that what constitutes incentives for one society may not be so for another. In this vein, Gelfand, Erez, and Aycan (2007) report findings that personal feedback influenced self-efficacy beliefs in individualistic cultures, whereas group feedback influenced self-efficacy beliefs in collectivistic cultures (see also Earley, Gibson, & Chen, 1999). Similarly, experiencing shame in organizational contexts had a negative effect on adaptive behavior and performance among Dutch participants (who experienced shame as a threat to their independent self), yet it had a positive effect among Filipinos (who experienced shame as a threat to harmony that needed to be restored; Bagozzi, Dholakia, & Basuroy, 2003). Hui and Yee (1999) describe research attesting that a warm and congenial work environment led to more satisfaction among collectivists than among individualists. Finally, Parkes et al. (2001) showed that employees with a collectivistic orientation who worked in an Asian organization (that supported collectivism) were more committed to the organization than employees who had an equally high collectivistic orientation but worked in an Australian organization (supportive of individualism). The foregoing research thus suggests that as such, affordances have no independent value to individuals, and such value is completely derived in conjunction with Want state that the affordances may or may not Match. Assuming that a given affordance had a given motivating property could thus misfire and fail to evoke the wished for reaction from individuals exposed to it.

Striking, real world examples of miscalculating the motivational impact of affordances due to neglecting subjects' actual Want states can be found in the work of Ginges and his

colleagues (Ginges & Atran, 2010; Ginges, Atran, Medin, & Shikaki, 2007). In a series of studies conducted with samples of Israeli settlers, Palestinians, Nigerians, and Americans, these investigators consistently found that, contrary to the popular consequentialist reasoning whereby adversaries make instrumentally rational choices in resource conflicts, they are in fact guided primarily by deontological reasoning based on moral precepts and sacred values. For instance, Palestinian and Israeli research participants' "violent opposition to compromise over issues considered sacred ... *increased* by offering (substantial) material incentives to compromise" (Ginges et al., 2007, p. 7357, italics added). In other words, offering material incentives out of sync with a dominant Want state not only may not work, but may backfire.

(2) Matches' indirect effects on motivational readiness*: (a) Want activation.* There is evidence that the presence of Matches with individuals' latent Wants may activate them. As mentioned earlier, Berridge and Aldridge (2008) and Berridge et al. (2009) found that a present situational cue (e.g., the sight of a needle for a drug addict) can trigger a sudden Want to ingest the drug. Similarly, Shah and Kruglanski (2003) demonstrated in a series of studies that Wants can be primed by opportunities to gratify them, that is, by Matches; for example the Want *to be fit* was activated by the possibility of *running*, etc.

(b) Expectancy arousal. A larger body of evidence attests to the effects of Matches on *Expectancies*. Thus, research suggests that exposure to negative incentives (Match with Wants of the avoidant type) increases the Expectancy that those Matches will materialize, that is, that the event in question will indeed take place. In this vein, Johnson and Tversky (1983) asked university students to read a tragic story of a death caused by either leukemia, fire, or murder, and then they asked them to rate a list of twelve risks (including the risk they just read a tragic story about). The fire story caused an overall increase in risk perception of 14 percent. The

leukemia story raised it by 73 percent. And the murder story raised overall perceived risk by 144 percent. Similar results were obtained by Johnson and Tversky (1983).

Incentives constitute part and parcel of the immediate situation. They are proximal to the actors, part of their here and now. Suggestive evidence that the motivational effect of proximal incentives works through their greater Expectancy of attainment comes from research on *temporal discounting*, the tendency to value desirable objects more as a function of how soon they can be attained. In an early paper, Rotter (1954) suggested that people will sometimes choose a smaller, more immediate reward over a larger, delayed reward, because longer delay corresponds to a lower probability of reward. Similarly, Green and Myerson (1996) argued that the wait for a delayed reward involves more risk (thus lowering the expectancy of attainment) because the greater the amount of time one has to wait for a reward, the greater the possibility that something will occur to hinder the attainment of that reward. There is in fact consistent evidence that temporal discounting is mediated by waning Expectancy over temporal distance (Frederick, Loewenstein, & O'Donoghue, 2003; Green and Myerson, 1996; Keren & Roelofsma, 1995; Prelec & Loewenstein, 1991; Rachlin, Raineri, & Cross, 1991; for discussion see Liberman & Forster, 2008).

As already noted, Tolman (1932, 1934) suggested that the S-S connection represents an Expectancy that in a given stimulus situation a given response will result in reinforcement. Extinction, in these terms, consists of the *vanishing of Expectancy* that a specific activity will be rewarded by need (Want) satisfaction. An empty goal box constitutes a mismatch between the *perceived* situational affordance and a current Want (an animal's hunger or thirst). It thus reduces the Expectancy of Want satisfaction in the situation at hand. Consistent with this logic, Mowrer and Jones' (1945) *discrimination hypothesis* asserts that extinction is facilitated by the

ease of discrimination between the training situation (where Match was present) and the extinction situation (where it was not). Similarly, the concept of latent extinction refers to reduction of response strength that occurs without overt behavior, and involves exposure of the animal to the goal context absent the reward, thus presumably reducing the Expectancy of reward (experimental evidence supportive of these notions is reviewed in Kimble, 1961, pp. 317-323).

Seligman's (1975) theory of learned helplessness and supportive empirical evidence are also consistent with the proposition that in the absence of Match between a Want and a perceived affordance, Expectancy of satisfaction wanes, thus reducing motivational readiness. In a seminal study, Overmier and Seligman (1967) reported that when "naive" dogs were placed in a shock chamber, they quickly and reliably learned to escape from the shocks. But when the animals were strapped into an inescapable harness and shocked for a period of time, then placed into the shock chamber again, they exhibited symptoms of *learned helplessness*: Almost without exception, they did not try to escape or avoid the shock at all. In terms of the present theory, then, the previously shocked dogs did not even have a goal of avoiding shock any more; their motivational readiness to act was much reduced, because their Expectancy of attaining it was nil, pushing motivational readiness back to a *pre-commitment zone*.

Seligman's (1975) theory of learned helplessness and Weiner's (1985) attributional theory of achievement motivation and emotion inspired the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), wherein individuals' motivational placidity (i.e., the near exhaustion of readiness) is traced to "hopelessness," the vanishing of hope (i.e., Expectancy) that one's Wants will be satisfied. According to the authors, hopelessness depression is characterized by apathy, lack of energy and a retarded initiation of voluntary responses, reflecting the wilting

of readiness. In the authors' words: "If a person expects that nothing he or she does matters, why try?" (Abramson et al., 1989, p. 362). In summary, there is considerable evidence that the presence of Match may induce the Expectancy of Want satisfaction, and conversely, the absence of Match may result in the reduction of Expectancy.

(3) Match quest. However important Match is to motivational readiness, it may not be *indispensable* to readiness (see Equation 1a). Where the Want is present yet Match is absent, individuals may seek alternative environments wherein Match is enabled. As noted earlier, in animal learning research, a hungry or thirsty animal that encounters an empty goal box hardly stops in its tracks or loses the motivational readiness to seek Want satisfaction. In fact, such animal's motivational readiness may be enhanced by the frustration engendered in such circumstances, and the vigor of its quest for satisfaction (reflected, e.g., in running speed, or increased force exerted on bar-pressing) is typically augmented (Amsel, 1958).

In the realm of human motivation, the tendency to seek out Match where it was initially absent is pivotal to Schneider's (1987) classic work on how "the people make the place." According to Schneider's ASA (attraction, selection, attrition) model, individuals differ in their goals and motivations. Founders of organizations structure them in ways that afford the gratification of specific motivations. Individuals with the appropriate goals are *attracted* to organizations that enable their realization. On their part, organizations exert *selection* pressures, and recruit into their ranks individuals whose Wants are *satisfiable* within the organizational environment; individuals whose fit with the organizational affordances is poor tend to leave the organization in search of better fit (representing *attrition*). In other words, far from inducing motivational inertness, the absence of Match (granting the insistent presence of a Want) seems to promote motivational readiness to engage in an intensive *Match quest*. Schneider's (1987)

analysis is supported by research of Holland (1976), Owens and colleagues (1985; 1979), Tom (1971), and Vroom (1966), all of whom found that people choose organizations based on the opportunities they afford for the attainment of valued outcomes.

Kristof-Brown, Zimmerman, and Johnson's (2005) meta-analysis of 172 studies found that person-job fit has a high negative correlation with intent to quit (r = .46), suggesting a motivation to seek alternative employment. In this vein too, Hamstra, Van Yperen, Wisse, & Sassenberg (2011) found that regulatory focus shows Match effects on employee turnover intentions. Promotion-oriented individuals showed reduced employee turnover intentions (they didn't want to leave their jobs) under a leader who used a transformational leadership style, while prevention showed those effects for a transactional leader. These findings imply the inclination to embark on a Match quest where current situation does not correspond to one's Wants.

(4) Interdependence of Wants and Expectancies. As noted earlier, unlike prior formulations that implied an independence between Wants and Expectancies, there is evidence that Wants can affect Expectancies, and that Expectancies can affect Wants. In both cases, moreover, the relations between these constructs may be positive in some cases and negative in others. Positive effects of Wants on Expectancies are attested to by work on wishful thinking (or motivated reasoning; Dunning, 1999; Kunda & Sinclair, 1999; McGuire, 1960), whereas Wants' negative effects on Expectancies are suggested by work on defensive pessimism (Carroll, Sweeny, & Shepperd, 2006; Norem & Cantor, 1986; Taylor & Shepperd, 1998). Furthermore, positive effects of Expectancies on Wants are implied by the work of Higgins et al. (2013), whereas negative effects are illustrated by research by Brock (1968), Lynn (1991), and Worchel et al. (1975), among others.

In summary, the present theory accounts for an appreciable body of empirical evidence

concerning motivational phenomena that accrued over the last half century or so. Its integrative framing affords an explication of a broad array of findings consistent with some of the prior models but incompatible with others, and, importantly, its novel features allow it to account for a plethora of findings inconsistent with prior models taken as a whole.

Releasing Motivational Readiness: From Willingness to Striving

The concept of motivational *readiness* implies its distinctiveness from actual behavior. A readiness is a *potential* (Hull, 1943; Spence, 1956), a *tendency* (Atkinson, 1964), or an *inclination* that may or may not be realized. Which is it going to be? And under what conditions? We have seen already that a certain level of motivational readiness may exist before the commitment point that may translate into goal formation once that point had been transcended. But a formed goal does not necessarily signify action engagement. Two contemporary psychological theories, *Motivation Intensity Theory* (Brehm & Self, 1989) and *Cognitive Energetics Theory* (Kruglanski et al., 2012) elaborate the circumstances in which goals may or may not spur individuals to action. We describe both briefly in what follows.

Motivation Intensity Theory (MIT)

Somewhat akin to the concept of *motivational readiness*, Brehm and Self's (1989) Motivation Intensity Theory (MIT) features the concept of *potential motivation,* defined as, "The maximum effort an individual would be willing to exert to satisfy a motive" (Wright, 2008, p. 682). This differs from *motivation intensity*, or "the amount of effort people actually expend" (Wright, 2008, p. 682). For the present purpose, it is of interest to divine what Brehm and Self (1989) meant by potential motivation, and what the conditions are under which it will or will not prompt the exertion of effort. The MIT focuses primarily on the latter issue of effort expenditure. In this formulation, *potential motivation* is defined rather generally (and rather similarly to

Atkinson's, 1964, formulation) as varying "with factors traditionally associated with motive strength including the need for the available incentive and the value of that incentive" (Wright, 2008, p. 684). Thus, the way in which the present formulation differs from Atkinson's model (as discussed earlier) is also the way in which it is distinct from the concept of *potential motivation*.

As for conditions under which potential motivation would fail to engender action, the MIT identifies two: (1) Where the task is too difficult so that motive satisfaction is impossible; and (2) Where success is possible but it requires more effort than is (subjectively) warranted by a particular motive's satisfaction. The former condition, of task difficulty, closely hints at the notion of Expectancy. Given that the task is too difficult to succeed at, the Expectancy of satisfaction wanes and motivational readiness is pushed back below the commitment point. The latter condition, of excessive required effort, hints at another consideration, not explicitly elaborated heretofore. It is that a goal must not be regarded in isolation but rather in the context of alternative objectives that are concurrently active. In the particular instance considered by the MIT, the goal of effort conservation is presumed to be active and to compete with the goal of satisfying a given Want via task performance.

Cognitive Energetics Theory (CET)

The notion of alternative goals that compete for a finite pool of available resources is mainstay of the Cognitive Energetics Theory (CET, Kruglanski et al., 2012). Specifically, the CET is concerned with *goal magnitude* (M_G) as a *mobilizing factor* of energetic resources from a larger resource pool currently available to the individual. In present terms, the goal magnitude construct (M_G) refers to levels of motivational readiness (its magnitudes) beyond the commitment point. The CET further assumes that M_G combines multiplicatively with the resource pool RP to determine a *potential driving force* that needs to (at least) match a

restraining force; the latter consists of the press of alternative goals, including the individual's unique proclivity to expend (versus save) energetic resources. Much like the MIT, the CET implies that motivational readiness per se, portrayed as *potential motivation* in the former theory and as *goal magnitude* in the latter, may translate into action only under certain conditions where its combination (with energetic resources) and confrontation with other goals determines its expression in overt action.

General Discussion

Traditionally, the study of motivation has been a staple of psychological science. It has played a pivotal role in the early dynamic models of the mind (including Freud's psychoanalytic theory and Lewin's field theory), and it was fundamental to neo-behaviorist theories of learning and performance (formalized in models of Hull, Spence, Tolman, and their associates). The advent of the cognitive revolution in the 1960 and 70s eclipsed somewhat the emphasis on motivation (Higgins, 2012a), but in the past two decades motivation has made a forceful comeback. These days, motivational analyses of affect, cognition, and behavior are ubiquitous across diverse psychological literatures. Deeply rooted in the history of the discipline, motivation appears firmly entrenched as a foundational topic in scientific psychology.

Though extensive and significant, recent developments in motivational science have made little contact with historic views of motivation. Questions remain as to whether the "new" and the classic motivational work share the same motivational concerns, and what has been their added contribution to motivation theory. In this article, we address these issues in relating classic motivational conceptions to relevant contemporary work. The context for so doing was a general theory of *motivational readiness* that we elaborated in the preceding pages.

The *readiness to act* in order to satisfy one's desire has been of a longstanding interest to motivation researchers. Whether labeled as *reaction potential* (Hull, 1943, 1951), *excitatory* potential (Spence, l956), *tendency* (Atkinson, 1964), *potential motivation* (Brehm & Self, 1989), or indeed the *readiness* to act (Zener, 1937), the underlying construct seems identical: It denotes a motivated impulse in waiting, an inclination set to be released in the right circumstances. Psychological scientists across broad swathes of paradigms and approaches (including animal learning, social cognition, I/O, clinical, educational, and personality domains, among others) have inquired into the make-up of such an impulse, and they have identified roughly similar ingredients that may combine to produce it. The present work builds on their seminal insights and proposes to extend and refine them in light of the last decades of motivational research.

Specifically, our *Want* construct generalizes prior notions of need, drive, or motive, categories and extends them to denote any type of currently felt desire regardless of origin (whether derived from tissue deficit, a stable personality disposition, or semantic priming). Likewise, our *Expectancy* construct denotes a subjective likelihood of Want satisfaction whether stemming from the availability of a *specific act* perceived as instrumental to goal attainment or reflecting *general optimism* and a sense of self-efficacy (Bandura, 1977). Whereas the Want construct is assumed indispensible to motivational readiness, the Expectancy construct is not, and the possibility is postulated of motivational readiness without Expectancy (see Equation 1a). We also part ways with the traditional implication that Expectancy and Value (Want, Match) factors are completely interchangeable as determinants of motivational readiness, or that they are completely independent of one another. Instead, based on recent evidence (Orehek et al., 2012; Shah & Higgins, 1997) we suggest that different psychological circumstances (represented by, for example, personality tendencies, situational conditions, or culture) may lend differential

weights to these factors, variously privileging Expectancy or Value over their counterparts. Furthermore, there is evidence that Wants may affect Expectancies and vice versa, and that the directions of these effects may be positive in some conditions and negative in others.

Most importantly, perhaps, our *Match* construct re-envisions the notion of incentive, which has been heretofore depicted independently of Want (as represented by need, drive, or motive concepts). This highlights the notion that the motivational contribution of situational affordances hinges on their correspondence with aspects of the individual's desire. Though Match is seen as a factor that *contributes* to motivational readiness, it is not assumed to be *indispensable* to readiness. Rather, given sufficient motivational readiness, an absence of current Match may give rise to the readiness to embark on a *Match quest*, that is, a search for situations whose affordances promise the satisfaction of one's desires.

Finally, we are assuming that Match (incentive) constitutes a secondary source of influence on readiness that exert its effects by impacting the primary sources of influence, that is, the Want and the Expectancy. An important implication here is that Match is a non-unique source of influence on readiness. Other possible sources of such influence are, for instance, need deprivation, semantic priming *affecting Wants*, and/or experiential history, social influence, and trait optimism *affecting Expectancies*.

Importantly, evidence for the present model comes from divergent areas of psychological research carried out from disparate conceptual perspectives and explored within heterogeneous methodological paradigms. Its convergence thus suggests an intriguing uniformity of motivational workings across personalities, cultures, situations and species.

Further Research Directions

Last but not least, it is of interest to consider the generative potential of the present theory and its implications for further motivational research. One possible direction for future work may be to test the model in its entirety rather than in a piecemeal fashion, as has been the case thus far. In other words, prior evidence cited in support of the present model pertained to the effects of its separate parameters, notably the Want magnitude, Expectancy of success, and Match. Missing thus far are global model-testing studies, carried out via *computer simulations* and or via *simultaneous assessment* of the model's parameters in various populations. It is through such comprehensive studies that the model's fit to empirical realities may be conclusively established, and emergent possibilities may be discovered.

A different direction for future work would be to continue the exploration of relative weights assigned to the models' parameters by different individuals and in varying circumstances. A close examination of such weights and their psychological bases may lend added depth to the understanding of motivational readiness and the complex circumstances that determine it. We already know that individuals in different psychological states (e.g., prevention versus promotion, locomotion versus assessment) lend different weights to the Expectancy versus Value (i.e., Want magnitude and Match) components. Might there be other variables (e.g., need for cognition, need for closure, the need to evaluate) that affect those weights as well?

Another future direction could explore the notion that Matches (incentives) are a non-unique, second-order, source of influence on readiness; this implies that their effect is interchangeable with (substitutable for) the effects of other indirect influence sources, for instance lower incentives coupled with greater optimism or greater need deprivation, should yield similar readiness as lower optimism, or lower deprivation and higher incentives, etc.

An additional, intriguing topic for further inquiry may concern the *assessment* of pre-actional motivational readiness. With few exceptions, extent of motivational readiness thus far has been inferred from the vigor of manifest actions. But if, as it has been proposed, a given motivational readiness might not invariably culminate in overt action (overridden as it might be by alternative motivational tendencies), it should be amenable to assessment in its own right, perhaps via the application of fine grained neuroscientific methods capable of detecting motivationally relevant brain events whether or not these ultimately instigate overt behavior (Pessoa, 2013).

Of particular interest is to examine the implications of our model in reference to current research directions in motivation science. For instance, it may be worthwhile to examine the present broad concept of Match in paradigms previously used to explore regulatory fit (Higgins, 2012b) in order to discover the common effects of these constructs and their possible differences. In addition, it may be instructive to revisit goal priming work and investigate the constraints on goal priming effects that the present model imposes. For instance, our analysis implies that goal priming procedures, assumed to activate a Want, should have little effect on *behavior* (assumed to require *goal formation*) if the *Expectancy* of Want satisfaction was nil.

Whereas the present theory is focused on motivational readiness pertaining to a single Want, individuals typically operate in multiple Want contexts in which different desires interact, and often clash with one another (cf., Kruglanski et al., 2002). The latter situation defines a major domain of psychological research concerned with self regulation. From the present perspective, self regulation issues arise where the readiness to pursue a given Want (say, to consume a tasty yet a fattening dish) competes with readiness aimed at a different Want (e.g., to maintain a slimming diet). Our theory of motivational readiness identifies the general factors that

may affect such competition and its outcomes. For instance, the degree to which the former Want is activated may depend on the Match between the perceived affordance (the fattening dish) and one's specific type of gluttony. However, research suggests that successful self-regulators may construct a novel link between such temptation and the more important superordinate goal (the slimming diet), and hence be able to overcome the temptation (Fishbach, Friedman, & Kruglanski, 2003). Or consider the case wherein the readiness to pursue a Want (e.g., staying "on the wagon") is seriously affected by a step toward the competing Want (e.g., taking that one drink offered at a party). The latter might occasion a precipitous dip in one's Expectancy to fulfill the former, superordinate, Want. Whether this situation would lead to giving up on that Want altogether (following the "what the hell" dictum) may depend on relative values of the remaining factors in the readiness equation. For instance, one's optimism about being able to resist the temptation, as well as the magnitude and accessibility of the Want to resist it, may reduce the likelihood of giving in despite the regretful slip. These possibilities, suggested by the present framework, could be profitably investigated in future research.

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Figure Captions

1. The Dual-Threshold Model of Motivational Readiness

2. Match between Want Content and Perceived Affordance

3. Determinants of Motivational Readiness

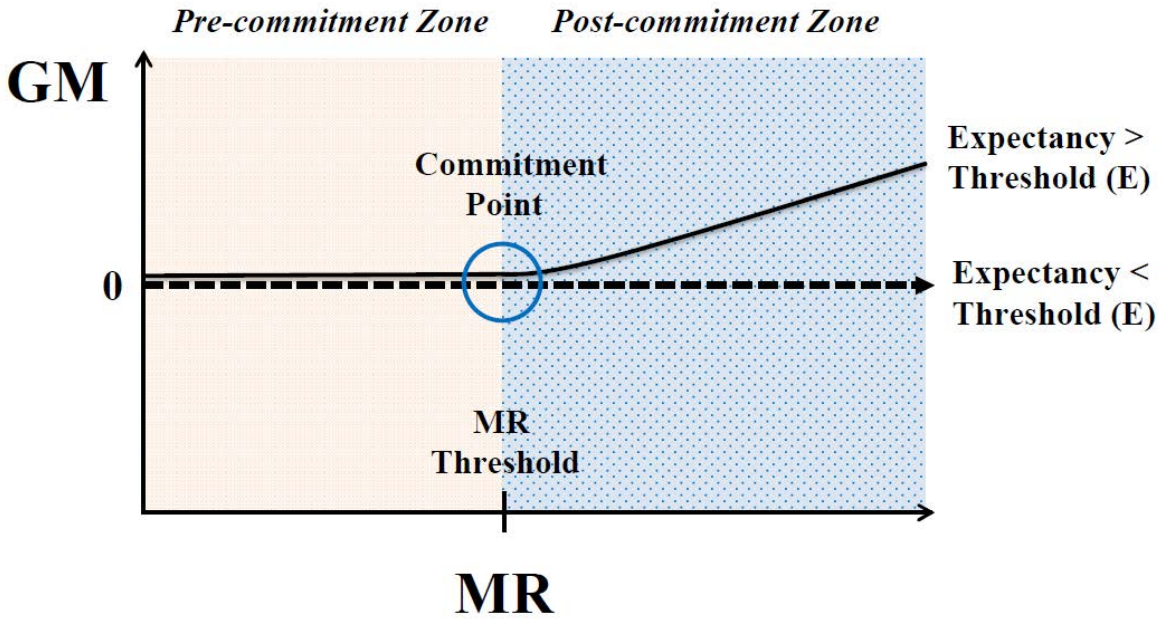
Pre-commitment Zone
Post-commitment Zone
GM
Commitment Point
Expectancy > Threshold (E)
0
Expectancy < Threshold (E)
MR Threshold
MR

Figure 1.

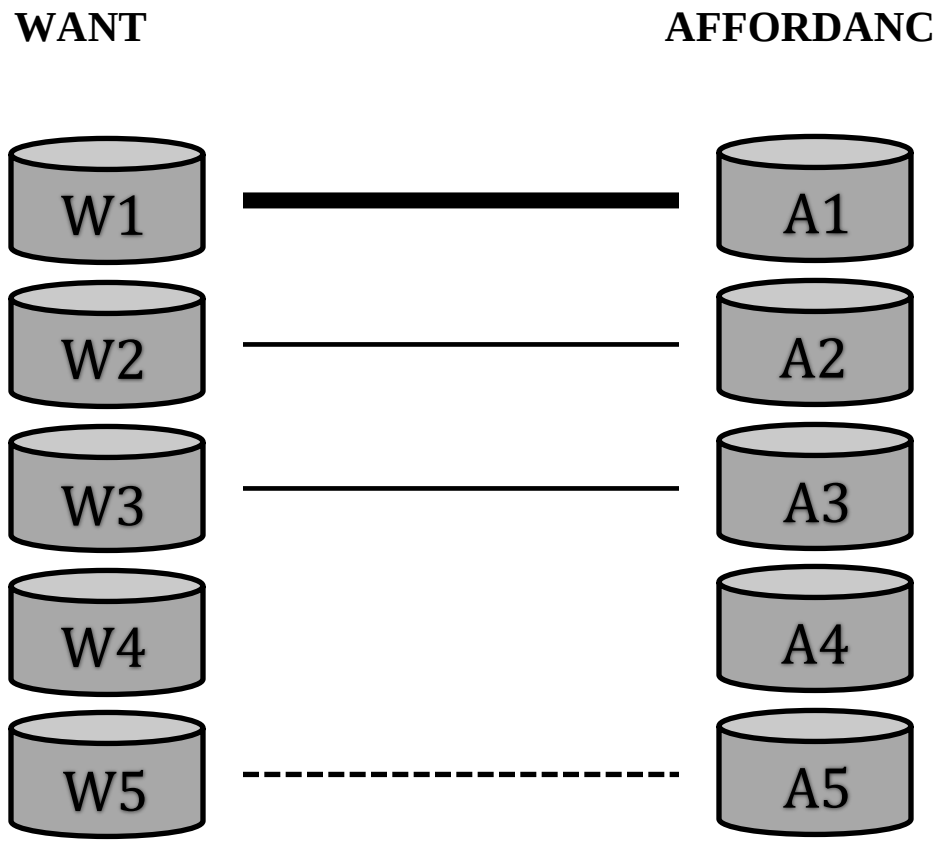

Figure 2.

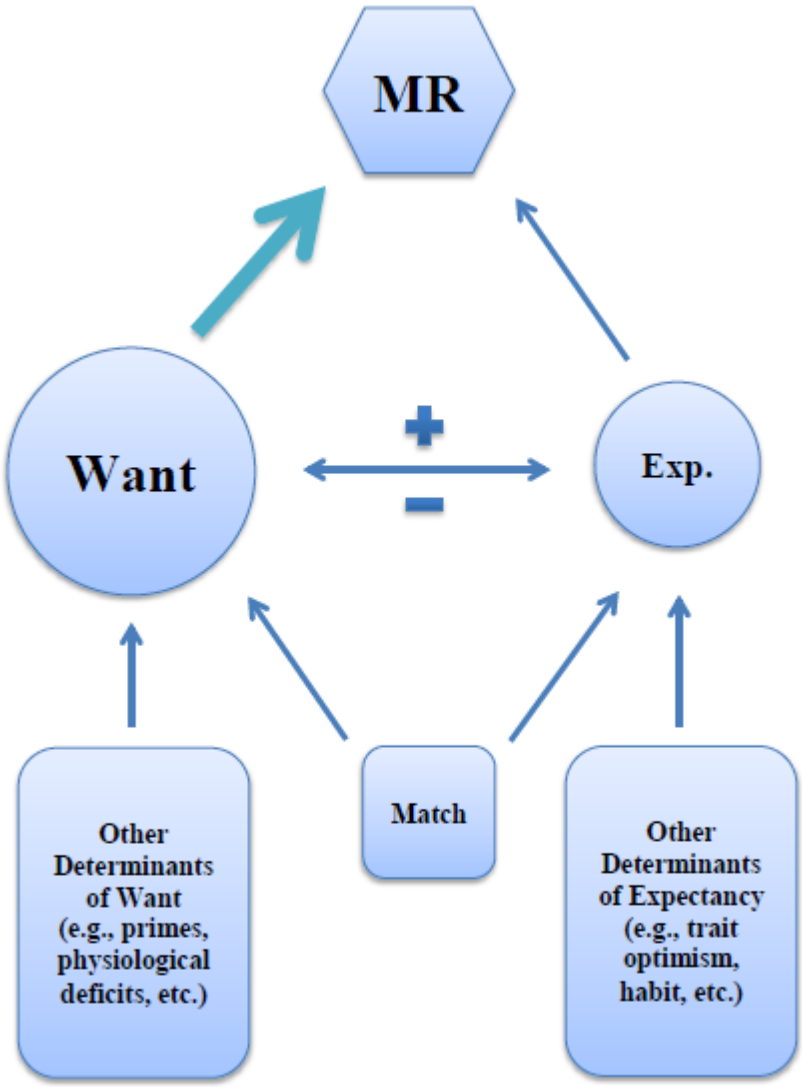
MR
Want
Exp.
Other Determinants of Want (e.g., primes, physiological deficits, etc.)
Match
Other Determinants of Expectancy (e.g., trait optimism, habit, etc.)

Figure 3.