Features of Multifinality

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Abstract

Diverse facets of the *multifinality* configuration in goal-directed behavior are identified and empirically explored. The multifinality construct denotes a motivational structure wherein a single means is linked to several ends. A multifinality configuration maximizes value that a given means promises to deliver while sacrificing expectancy of attainment due to a dilution effect. Several phenomena implied by multifinality theory are investigated, including an unconscious quest for multifinal means, the constraints that such quest imposes on means to a focal goal, and structural conditions under which an activity may be experienced as intrinsically motivated. Multifinality phenomena appear in numerous domains of social cognition, and the present theory offers a novel perspective on classic motivational effects.

Keywords

motivation, goals, means

People's pursuit of specific ends often takes place alongside concurrent goals that also vie for consideration. The latter may be explicit and overt, or implicit and tacit, lurking at the "back" of individuals' minds, as they engage in the pursuit of other, overt, objectives. In shopping for groceries, one may be guided by the goals of *taste, healthfulness*, and *cost*. In driving to work, one may try to *save on gas, beat the traffic*, and avoid *speed traps*. Moreover, in writing a scientific review, one may aim to be *objective, impress the editor*, and *defend* one's pet point of view. In all such instances, a single activity (e.g., shopping, driving, or reviewing) is concomitantly serving several objectives. The case where a single behavior is performed in the service of multiple goals has been described by the term *multifinality* (Kruglanski et al., 2002) whose specific features we explore in the pages that follow.

Recent work on multifinality (Chun, Kruglanski, Friedman, & Sleeth-Keppler, 2011; Köpetz, Faber, Fishbach, & Kruglanski, 2011; Orehek, Mauro, Kruglanski, & van der Bles, 2012; Zhang, Fishbach, & Kruglanski, 2007) suggests that this configuration has unique psychological properties with intriguing implications for a broad variety of phenomena. In the present article, we present a theoretical analysis that elucidates these properties and describe empirical evidence concerning their manifestations.

Basic Terms

A basic multifinality configuration is represented in Figure 1 depicting a single *means* attached to two separate *goals*. The multifinal configuration has a motivational *substance* and a cognitive *structure*. The substance pertains to *contents* of the specific means and goals being depicted. The structure pertains to their *interrelations*. Consider a multifinal activity of dining at a gourmet restaurant, serving two goals whose specific contents are hunger satisfaction and food enjoyment. The *dining activity* (the *means*), as well as *hunger satisfaction* and *food enjoyment* (the *goals*) are the substantive elements of this multifinal setup. The *structure* of this configuration consists of one means connected to two goals. The same configuration that links a single means with two goals can appear, of course, with numerous different means and goals. Likewise, any substantive element can appear in many different configurations. For instance, dining at a gourmet restaurant may appear in a configuration that links a single means with *three* goals—satisfying one's hunger, eating enjoyment, and impressing one's date—or a configuration that links a means with a *single* goal only (satisfying hunger), and so on.

The broad, content-free, character of the present conceptual framework suggests that it may apply to a broad range of phenomena in the realm of motivated cognition. As will be

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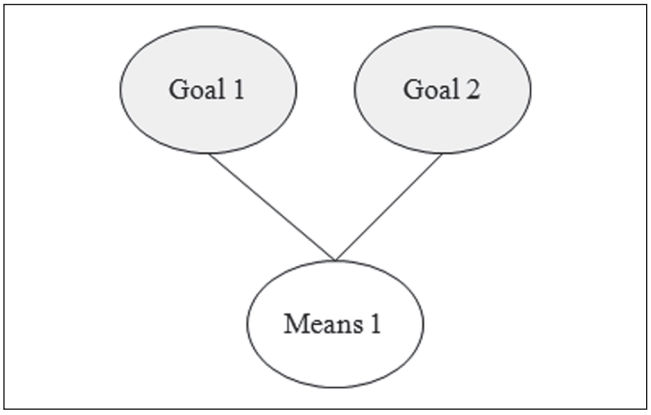

Figure 1. A multifinal configuration in its simplest form: A single means attached to two separated goals

shown, the multifinality paradigm offers novel insights into topics such as *unconscious choice* (Wilson & Nisbett, 1978), *goal activation* effects (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trotschel, 2001), *value from fit* phenomena (Higgins, Idson, Freitas, Spiegel, & Molden, 2003), *motivated biases* (Dunning, 1999; Kunda, 1990), *instability of preferences* (Tversky, 1969), *optimal distinctiveness* issues (Brewer, 1991), and *pluralistic ignorance* effects (Prentice & Miller, 1993) among others. These are specifically examined in due course. However, first we describe the multifinality theory and review the empirical support for its hypotheses.

Multifinality Theory: An Overview

Value Benefit

Consider a multifinal means that in addition to a focal goal promises to attain additional goals. Such means affords greater value than a unifinal means, giving it an advantage (increasing its "bang for the buck"), hence lending it added appeal and motivating a quest for its discovery.

Three implications follow: (a) A multifinal means' advantage over its unifinal counterpart will evaporate if some or all of its additional goals were already attained or were inhibited or rendered nonsalient. (b) The quest for multifinal means will reduce the consideration set of means to the focal goal. Simply, multifinal means are a subset of means to a focal goal; insistence on such means would thus restrict the range of means one would contemplate. (c) Increased commitment to a focal goal will inhibit the alternative goals, hence allowing the consideration set of means to the focal goal to reexpand.

Expectancy Cost

Whereas a multifinal means promises a value advantage, a trade-off is involved in that such means may appear less instrumental to the focal goal than the unifinal means: Because of its association with additional goals, the strength of its links is *diluted*, lowering the expectancy that the means will attain any of its ends.

Three implications follow: (a) If some or all of the additional goals were rendered nonsalient, a unifinal means would be preferred over a multifinal means because of the expectancy disadvantage of the multifinal means, no longer compensated for by a value advantage. (b) Even where the panoply of goals associated with a given multifinal means were active, personal inclinations or situational circumstances that privilege expectancy over value would prompt individuals to prefer a unifinal means over its multifinal alternative. In contrast, personal inclinations or situational circumstances that privilege value would prompt individuals to prefer a multifinal means. (c) Because of the dilution of links' strengths between the multifinal means and its several ends, a unifinal means (boasting a stronger link to its end) would be fused with the end to a greater degree than the multifinal means, acquiring the characteristics of an intrinsically motivated activity (experienced as an end in itself) wherein the means and the end are one.

These core assumptions of the multifinality theory are extended and elaborated on in the pages that follow.

Multifinality Theory in Detail

Our conceptual analysis of the multifinality configuration revolves around the two essential determinants of motivation toward an activity, namely, the *value* and the *expectancy* components. We consider value first.

A goal has been defined as a desirable state of affairs deemed attainable by one's action (Kruglanski, 1996). The *desirability* component refers to the (subjective) *value* attached to that end state, and the *attainability* component to the *expectancy* of attainment in classic motivational theory (Atkinson & Birch, 1970). In general, psychological theorists have assumed that motivation to perform an activity is a product of the *value* the activity promises to deliver and of the *expectancy* that the activity will bring about the desired end (Lewin, Dembo, Festinger, & Sears, 1944; Tolman, 1955; Vroom, 1964; for a review, see Feather, 1982; Mitchell, 1982). Typically, the value component of the Expectancy × Value algorithm was implied to pertain to a single goal assumed to propel the activity. It is a straightforward extrapolation to extend this to the multifinal case wherein an activity represents the concurrent pursuit of several ends: By definition, each goal comprises some value, hence multiplicity of goals attained by an activity compounds value and should increase the activity's appeal.

Value

Multifinality Preference Effect. The focus of multifinality theory is on *activity preferences*. Because activities constitute means to some goals, preferences among them depend

on value that those goals represent. An essential aspect of multifinality is the compounded value that a multifinal means promises to proffer. Therefore, considering value alone, a multifinal means should be "rationally" preferred and selected over a unifinal means (Kruglanski & Orehek, 2009). Following this logic, the value and, therefore, the preference for multifinal means should decline if some of the goals attainable through this means were deactivated or diminished in importance. What makes this particularly interesting is that as with other goal-driven phenomena, such choice might take place outside individuals' conscious awareness (Fishbach & Ferguson, 2007). In what follows, we present evidence for these notions.

The concept of *multifinal choice without awareness* casts novel light on Wilson and Nisbett's (1978) seminal work. In their research, passersby at a department store were asked to select among four identical pairs of nylon stockings the pair of the highest quality. A strong position effect was obtained such that the two rightward objects in the array were heavily over-chosen. The highlight of this research, of central interest to its authors, was that participants seemed entirely unaware of their bias and justified their selection entirely in terms of the quality of the choice objects. But why did the rightward bias occur in the first place?

The notion of *multifinality* offers an insight into the puzzle. From this perspective, in addition to the goal assigned by the experimenter, that of *making a reasonable choice*, participants in the Wilson and Nisbett's (1978) study also possessed a goal of reaching *quick closure* after inspecting the entire array of stockings; this would have allowed them to get on with their shopping task, the main reason for their being there in the first place. Whereas the former (assigned) goal was highly explicit and conscious, the latter goal may have constituted an implicit "background" concern of which the participants might have not been explicitly aware.

Consider, additionally, that English is written and read from left to right and, as a consequence, the scanning habit within the American culture shows a left to right directionality (Maass & Russo, 2003). If so, both goals above (making a reasonable choice and reaching quick closure) would have been satisfied by the rightward objects in the array, the last ones to be inspected following an initial sweep. In the present terminology then, the rightward objects would have been more multifinal than their preceding, left-lying alternatives. Thus, multifinality might have constituted a major reason why Wilson and Nisbett's (1978) participants ended up overchoosing the rightward objects and exhibiting the enigmatic position effect of which they were eminently unaware. It is also fair to assume that for the participants concerned, the perceived expectancy of making a reasonable choice did not vary much across the option alternatives, hence the value considerations may have been the only one that mattered.

To test the multifinality interpretation of Wilson and Nisbett's (1978) findings, Chun et al. (2011, Study 1) manipulated the goal of reaching quick closer that participants in Wilson and Nisbett (1978) presumably had. They found that individuals

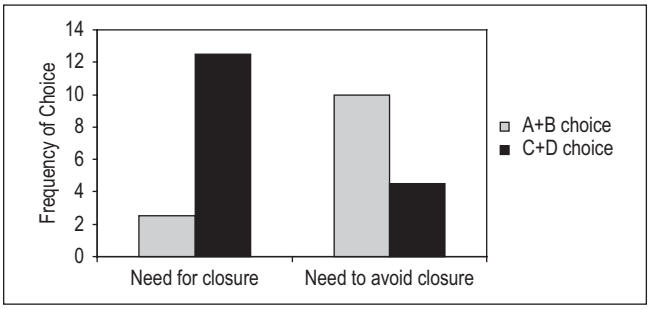

Figure 2. Frequency of choice as function of need for closure
A+B choice represents the choice of the first two pairs of socks in the array; C+D choice represent the last two pairs of socks in the array

choosing among four pairs of (identical quality) socks exhibited a right position bias, but only where their need for closure was elevated by time pressure (Kruglanski, 2004; Kruglanski, Pierro, Mannetti, & DeGrada, 2006; Kruglanski & Webster, 1996). The bias was completely eliminated when participants' need to avoid closure was induced by accountability instructions (see Figure 2).

Chun and colleagues' (2011) subsequent studies examined the generality of the multifinality quest across diverse goal contents. They found, among others, that in choosing the "sturdier" of two actually identical swathes of cloth, participants primed with the goal of identifying with their university tended to choose the cloth with the university colors over an alternatively colored swathe (Study 2). In contrast, where the goal of disidentification with their university was primed, participants predominantly selected the alternatively colored swathe. Similarly, when the goal of identifying with the United States was primed, participants choosing the "tastier" among two (actually identical) sodas selected predominantly the soda that they perceived as "more American," namely Coke, over its alternative, namely Pepsi. However, where the goal of disidentifying with the United States was primed, participants predominantly avoided the Coke and overwhelmingly selected Pepsi (Study 3). Pertinent to our previous discussion, neither in the Wilson and Nisbett's (1978) research nor in the Chun and colleagues' (2011) replications were the participants aware that their choice was multifinal in that beyond satisfying the explicit goal assigned to them by the experimenter, it also served the primed, implicit, goal. As in Wilson and Nisbett's (1978) work, in our research too, participants justified their choices exclusively in terms of their overt or focal goal, the quality of objects among which they were choosing.

In the Chun and colleagues (2011) studies, the explicit and the implicit goals were concomitantly present in all relevant choice situations. Insofar as the explicit goal assigned to participants (i.e., choosing the superior fabric, or a tastier drink) was equally served by each of the choice options (serving as means to that goal), there was no evidence that this goal was actively pursued. To address this issue Chun et al. (Study 5) manipulated the presence (vs. absence) of the

explicit and implicit goals orthogonally to each other and found that each type of goal exerted an independent effect on participants' choices. Specifically, when only the explicit goal (i.e., making a good hire for a biological company) was active, participants chose the most instrumental means to such goal (i.e., the candidate who had the best grades in biology among four alternative options). When the implicit goal was subtly activated (i.e., identifying with Korea), participants' choice reflected a search for the most instrumental means to such goal (i.e., the candidate with highest grades in Korean history regardless of his or her grades in other subjects). Finally when both aforementioned goals were present, a choice of the multifinal means that served both goals conjointly superseded the choice of means serving each of those goals separately. In this case, participants selected the candidate with high grades in biology and Korean history.

Goal deactivation. Multifinality preference effect assumes that all of the several goals attached to the multifinal means are currently active. If some of the goals had been attained previously via alternative means, advantage of the multifinal means is diminished. Proverbially, there is no point in "bringing coal to Newcastle" as the coal is there already. In other words, once a goal has been attained, it gets deactivated (Forster, Liberman, & Higgins, 2005). As a consequence, its behavior-driving potential is dissipated, and the behavioral means to that goal loses its attraction. In Lewin's (1935) terms, attainment occasions a draining of tension from the goal system. For instance, given that one's hunger had been satisfied, the opportunity to eat no longer is of interest. Moreover, given that one's self-worth had been affirmed, the opportunity to self-affirm again will lose its luster (Steele, 1988). A straightforward boundary condition on the multifinality preference effect concerns, therefore, prior attainment and, hence, deactivation of some of the goals served by the multifinal means.

This notion received support in two recent experiments: In a study by Chun and colleagues (2011, Study 4), a multifinal preference for a sheet of construction paper with one's university's colors, assumed capable of serving not only the explicit goal of selecting the sturdier paper but also the implicit goal of esteem enhancement, was eliminated in a self-affirmation condition where the esteem goal was alternatively attained (see Figure 3).

In an additional study, Bélanger, Kruglanski, and Sharvit (2011) tested the notion that multifinality concerns would increase the subjective value assigned to a multifinal means as compared with a unifinal means, but only if the background goal that the multifinal means also served had not been attained by other means. Participants, students at the University of Maryland (UMD), were primed with the goal of identifying with UMD by reading a short text extolling its virtues. Subsequently, they were given the opportunity to fulfill (or not) their identification goal by completing a computerized value survey in which they were assured (or not) of their UMD identity. Following a procedure developed by Higgins and colleagues (Higgins, Idson, et al., 2003), participants were then offered a choice among two gifts: a UMD mug and an inexpensive disposable pen. It was ascertained in advance that the mug was perceived as more attractive than the pen and that it was, therefore, instrumental to the explicit goal of obtaining a valuable gift. It was found that although everyone chose the mug, participants with an unfulfilled identification goal estimated the value of the mug as significantly higher than those whose identification goal had been fulfilled via the ostensive value survey. Thus, consistent with our goal deactivation analysis, it appears that multifinal means are more attractive than unifinal means only so long as the background goal they serve is unfulfilled. When such a goal is alternatively fulfilled, appeal advantage of the multifinal means (reflected in the monetary value assigned to it) is eliminated.

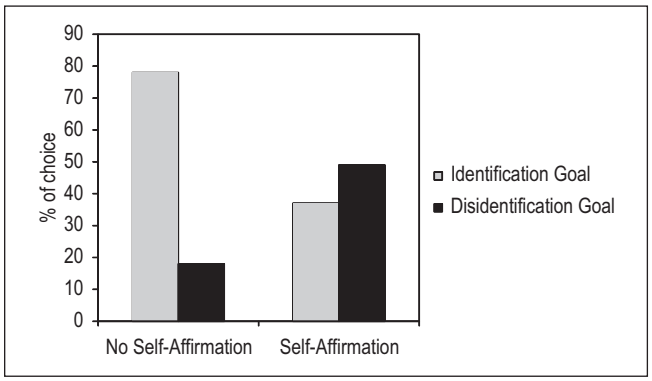

Figure 3. Percentage of choosing the university colored paper as a function of background goals of identification and disidentification and self-affirmation

Multifinality Constraints Effect. We assume that the added value from a supplementary goal(s) (assuming a constant expectancy) endows the multifinal means with special appeal and incites a search for such a means in a multiple goal situation. Because not all means to a given goal are likely to be multifinal, such search will likely reduce the number of means deemed worthy of consideration, (i.e., reduce the size of the *consideration set* of means). The multifinality constraint effect is graphically depicted in Figure 4. In support of this notion, Köpetz and colleagues (2011, Study 1) found that participants approached during lunch hour and were reminded of their goals for the rest of the day, but not participants who were not similarly reminded, restricted their consideration set of foods to those that were easy to get and did not necessitate a substantial time investment, thus allowing sufficient time for pursuit of the alternative goals.

Focal goal commitment. Multifinality constraints should be relaxed by increased commitment to one of the several current goals. This may occur via the *goal-shielding process* (Shah, Friedman, & Kruglanski, 2002) whereby increased commitment to a given goal occasions an inhibition of alternative goals. In other words, a *value redistribution* may take

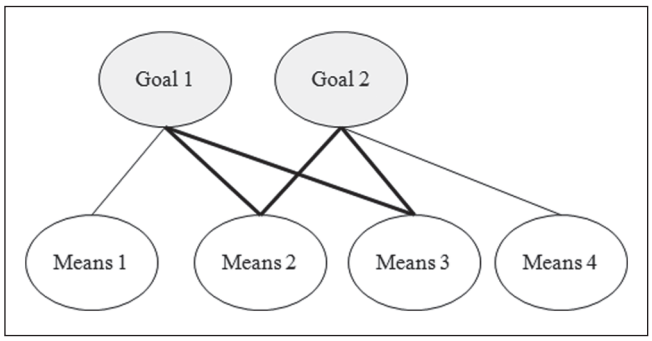

Figure 4. Multifinality constraints effect: The coactivation of goals restrains the consideration set of means due to the quest for multifinal means serving all of the goals at once (thicker lines connect the activated goals with the considered multifinal means)

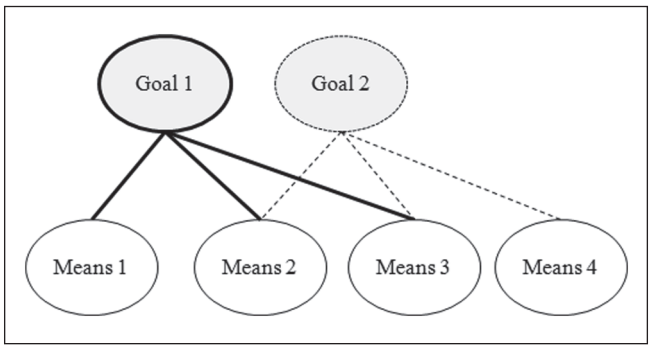

Figure 5. Goal commitment effect: Commitment to a given goal (goal with a thicker contour) fosters the suppression of alternative goals (goal with a dashed contour), which occasions the reexpansion of the consideration set of means (thicker lines connect the activated goals with the considered means)

place involving a rise in value of the increased commitment goal, and a decline in value of the alternative goals. An augmentation of commitment will occasion a reexpansion of the consideration set of means to the specific goal to reinclude unifinal means serving that goal uniquely. Again, this effect should be mediated by suppression of the alternative goals. In other words, when a singular end is all that matters, any means to that goal would be deemed acceptable (instantiating the popular adage of "end justifying the means"), including ends that are detrimental to other (currently suppressed) concerns. Figure 5 depicts the effect of goal commitment on the suppression of alternative goals, involving a reexpansion of the consideration set of means.

Köpetz and colleagues (2011, Study 3) looked at the effect of increased commitment to one of the coactive goals on size of the consideration set of means to this goal. Previous research has shown that the regulation of eating behavior often involves two goals, the goal of food enjoyment and the goal of weight control (Finkelstein & Fishbach, 2010; Stroebe, 2002; Stroebe, Mensink, Aarts, Schut, & Kruglanski, 2008). Accordingly, Köpetz and colleagues (2011, Study 3) assumed that when both goals are salient, people would restrict their choice of foods to ones that are tasty, but also low in caloric content, hence being multifinal in the situation at hand. However, when food enjoyment becomes relatively more important and hence more committing as a goal, people may forego their weight control concerns and expand their means set size to include various tasty foods regardless of their expected impact on the alternative goal.

Köpetz et al. (2011) manipulated the commitment to *food enjoyment* via a modified mental contrasting procedure (Oettingen, 2000; Oettingen, Pak, & Schnetter, 2001). In the high commitment condition, participants were asked during lunchtime to list three advantages and three disadvantages of choosing tasty/palatable foods. Contrasting the desirability of goal pursuit with the negative aspects of pursuit has been often found to increase goal commitment (Oettingen, 2000; Oettingen et al., 2001). In the control condition, participants were asked to list three advantages of choosing tasty/palatable foods as well as three advantages of choosing low caloric foods. This procedure presumably allowed both goals to be activated to the same extent while keeping their relative importance constant. It was found that when asked to list foods they would consider for lunch, participants in the high importance (of food enjoyment) condition (a) listed more foods than their counterparts in the control condition, attesting to the predicted reexpansion of the means set size. Such reexpansion was produced by increasing the number of tasty yet highly caloric foods listed, that is, foods that while serving the goal of food enjoyment are incompatible with the goal of weight control.

In a conceptual replication of this study, Köpetz and colleagues (2011, Study 4) increased commitment to the food enjoyment goal via a subliminal evaluative conditioning procedure (pairing subliminally flashed words related to food enjoyment like "taste" with positive adjectives presented supraliminally). Participants in the high commitment condition listed more foods than those in the control condition, and this difference derived, again, from an increased number of highly caloric, hence unifinal, foods in the former (vs. the latter) condition.

Finally, consistent with our analysis, a reexpansion of the means set to the high commitment goal should be mediated by relaxation of multifinality constraints imposed by the alternative goals, driven by an inhibition of the latter (Shah et al., 2002). In their last study, Köpetz and colleagues (2011, Study 4) found support for this mechanism. In this experiment, participants whose commitment to eating was enhanced via a priming manipulation listed a greater number of foods that they would consider consuming than their counterparts in the control condition; this difference resulted from the greater number of highly caloric foods listed in the high commitment (vs. the control) condition. Of particular importance, participants in the high commitment condition tended to *inhibit*

words related to dieting, which in turn mediated the reexpansion of the means set size to the eating goal.

In summary, Köpetz and colleagues' (2011) work supports the present theory whereby the presence of multiple goals introduces multifinality constraints that limit the consideration set of means to those capable of serving the several coactive goals. Multifinality constraints may be relaxed, however, where commitment to one of the several goals is augmented, leading to inhibition of the alternative goals, hence, allowing the means set size to the committed goal to reexpand.

Feasibility of the multifinality quest. The multifinality constraint effect assumes a quest for multifinal means, and it depends on feasibility of identifying such multifinal means. We assume that feasibility can be a matter of degree. The popular expression of "Having the cake and eating it too" represents the quintessential oxymoron; it depicts goals that cannot be concurrently attained. However, "killing two birds with one stone" designates an attainable state of affairs, a means that achieves two ends all at once. We assume that some goal combinations have numerous means in common. This should increase the feasibility of discovering a multifinal means, and reduce the extent to which the quest for the multifinal means restricts the set of means to the focal goal. One might find it easy to think of multiple ways to attain simultaneously the goals of "losing weight" and "being an athlete" (i.e., "choosing a balanced diet," "exercising regularly"). Other goal combinations may make it difficult to discover a multifinal means that serves all of the active objectives. For instance, it may be rather difficult to envisage a way of "doing well in school" and at the same time "being a first rate athlete." We are assuming that where feasibility of finding a multifinal means is low, individuals may give up on the multifinality quest, all of which suggests that the relationship between perceived feasibility of finding multifinal means and the multifinality constraint effect should be curvilinear. When feasibility is high, that is, where the several coactive goals share numerous means in common, finding multifinal means should be easy, resulting in little (if any) reduction in means number. When feasibility is very low, individuals may simply give up on the multifinality quest. Instead, they may exercise goal choice by inhibiting the alternative goal and limiting their concerns to the focal goal at hand. In this case too, there should be little or no reduction in means number. The multifinality constraints effect should be, therefore, most pronounced in an *intermediate feasibility condition* where the (sub)set of multifinal means is appreciably smaller than the overall means set.

To investigate these possibilities, Köpetz and colleagues (2011, Study 2) manipulated the feasibility of finding a multifinal means by subliminally priming an alternative goal that varied in the number of means it shared with the focal goal of *health*. In the high feasibility condition, the alternative goal was *staying in shape*, sharing a great number of means with the *health* goal. In the moderate feasibility condition, the alternative goal was *doing well in school*, which, according to a pretest, shared fewer (yet some) means with the *health* goal. In the low feasibility condition, the alternative goal was *drinking alcohol*, which, according to pretest, shared no means whatsoever with the health goal. Consistent with our theory, it was found that the number of means in both the high and the low feasibility conditions was greater than the number of means in the moderate feasibility condition, describing a curvilinear relation. Also as expected, the means in the high and moderate feasibility conditions, *but not those in the low feasibility* condition, were preponderantly multifinal, thus serving the focal but also the (subliminally primed) alternative goal. Finally, consistent with our theory, the alternative goal in the low feasibility condition (of drinking alcohol) was inhibited, but its counterpart in the high feasibility condition (*staying in shape*) was not.

Expectancy

The foregoing discussion assumes that the expectancy component of motivation is *independent* of the number of goals an activity is seen to promote. There are reasons to believe, however, that it is not completely independent, and that the number of goals attached to a given means is inversely related to its perceived *instrumentality* to any of those goals, and hence to the expectancy that it will afford its attainment. This suggests that under some circumstances and for some individuals, a multifinal means might not be more appealing, and in fact might be less appealing, than a unifinal means, serving a singular goal only.

Instrumentality Loss Effect. We assume that the greater the number of goals attached to a given means, the lesser the perceived instrumentality of the means to each of these goals, which in turn, lowers the expectancy that the means will procure the goal. The logic of this postulate rests on two preliminary assumptions, having to do with processes of *dilution* and *construal*, respectively. We consider them in turn.

Dilution. The first assumption has to do with the cognitive representation of multifinality that links a single means to several goals. This relates to Anderson's (1983) "fan effect" whereby the ability of a given construct to activate another depends on the number of constructs with which the former is associated. In other words, each construct is assumed to have a constant activation potential that is dispersed across its linked constructs, proportionately diluting the strength of each of the links. In application to multifinality, the number of goals associated with a given means dilutes the association strength between the means and any of the goals. It also follows that strengthening a specific link between a construct and one of its associates (e.g., between a given means and one of its associated goals), hence augmenting the degree to which the construct activates the associate, would proportionately weaken the construct's links to its remaining associates, hence its potential to activate them.

Construal. Our second assumption is that elements of cognitive *structures* are often given *substantive* motivational interpretations. For instance, the ease/speed with which a goal is activated may be interpreted as goal importance, presumably because important goals are activated often and hence are highly "activation-ready" and cognitively accessible (Higgins, 1996). Similarly, the ease/speed of goal activation by an associated means, reflecting their strength of association, is often interpreted as *instrumentality* of the means to the goal in question, that is, the likelihood of goal attainment via the particular means.[1]

If the perceived expectancy of goal attainment is lower for multifinal versus unifinal means, this has an intriguing implication for the case where only one of the several goals mattered to an individual. Specifically under those conditions, a unifinal means to that goal should be preferred over the multifinal means. Earlier, we have seen that the preference for a multifinal means is reduced if some of its associated goals are attained through other means. Note, however, that associated goals may be deactivated (or unactivated) in other ways as well. Thus, in a given situation, only one of the goals that a multifinal means serves may be salient, or accessible, whereas the other goals may not be of a particular concern. For example, whereas a multipurpose phone (say an iPhone) may serve the means of communication as well as that of musical entertainment, in an emergency (having one's car break down late at night in an unfamiliar location), only the goal of communicating one's predicament to relevant others might matter.

The implied reduction in preference for a multifinal over a unifinal means might lead one to believe that the multifinal means would be perceived as approximately equal in appeal to the unifinal means. Intriguingly, however, our analysis suggests that it might even be perceived as *less appealing* than the unifinal means due to its *instrumentality loss* effected by dilution. Specifically, a prior mental representation of a means as promoting several goals may prompt the perception that it serves any one of those goals in a middling fashion only, and less well than the unifinal means individually serving those same goals. Such (stable) representation of the multifinal means may carry over to the situation where only one of the associated goals is active, prompting a preference for a unifinal means. For instance, if stuck on a highway and urgently needing to call for assistance, a traveler might be more likely to reach for her regular cell phone, rather than the "fancy," multipurpose, iPhone, whose perceived effectiveness as tool of communication may have been compromised by its multifinality.

Zhang and collaborators (Zhang et al., 2007) carried out several studies relevant to these notions. Participants were induced to think of different means (e.g., "aerobic exercise") for attaining one goal (e.g., "protecting from heart disease") in the unifinal condition, or for attaining two goals (e.g., "protection from heart disease" and "maintaining health bones") in the multifinal condition. Across different goals and means, either provided by the experimenter or ideographically generated by the participants, a second goal attached to a single means decreased the perceived instrumentality of the means to the first goal listed evincing the dilution effect (Zhang et al., 2007, Studies 1 and 2).

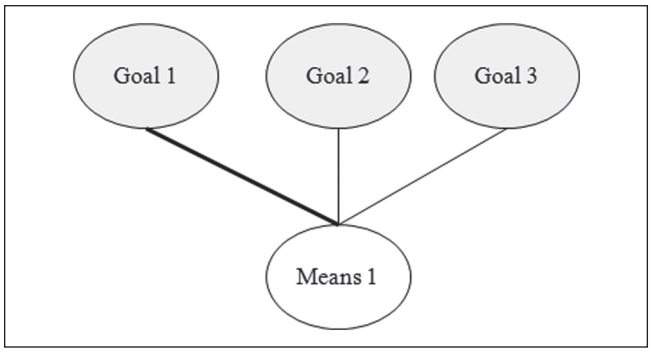

Figure 6. Strengthening a given means-goal association weakens its association to other goals

Underlying the observed reduction in perceived effectiveness of the multifinal (as compared with the unifinal) means is the assumption of diminished association strength between the multifinal (vs. unifinal) means and the goal. Specifically, we have suggested that association strength, *a structural variable*, tends to be interpreted as instrumentality or effectiveness indicating a systematic relationship between *structure* and the (motivational) *meaning* that the structure invites. An additional study of Zhang and his collaborators (2007; Study 4) increased experimentally the strength of association between one means (jogging) and the goal (strengthening of muscles), and found that this increased the perceived instrumentality of this means to that goal and decreased the perceived instrumentality of this means to the alternative goal (increasing oxygen to the lungs). These effects are portrayed in Figure 6.

Zhang and colleagues (2007, Study 5) examined the relationship between association strength, perceived instrumentality, and multifinality. It was found that (a) the means-goal association strength was greater in the unifinal versus the multifinal condition, (b) the perceived instrumentality of the means to the common goal was greater in the unifinal versus the multifinal condition, and (c) the strength of association mediated the relationship between multifinality condition (unifinal vs. multifinal) and perceived means instrumentality. The last study in Zhang and colleagues' (2007, Study 6) series found that the lesser perceived instrumentality of a means whose multifinality was made salient (a pen shown capable of serving also as a laser pointer) translated into a lesser behavioral tendency to use it as compared with a means whose multifinality was obscured (the same laser pen whose pointing function was not explicitly demonstrated).

Consistent with our theoretical analysis then, the multifinal option appears to involve a trade-off between enhanced *value* that supplementary goals contribute and the reduced *expectancy* that the multiplicity of goals produces. It also appears that the expectancy reduction effect is mediated by a

dilution of association strength between the multifinal means and each of the associated goals' (consistent with Anderson, 1983; Anderson & Reder, 1999) "fan effect." These effects appear robust across a wide variety of (externally described or self-generated) goals and across cognitive as well as behavioral measures of means' attractiveness.

Expectancy Versus Value Focus. Research by Zhang and colleagues (2007) described above addressed the case where only one goal of the multifinal set was active, or salient for research participants. Under those conditions, the (*undiluted*) unifinal means was consistently preferred over its (*diluted*) multifinal alternative. However, even where several goals in the multifinal set were concurrently active, some people, as well as most people in some situations, might be more responsive to the *expectancy* aspect of the trade-off, and others—to the *value* aspect. Specifically, circumstances and individuals that privilege value over expectancy should prompt a preference for a multifinal over a unifinal means. In contrast, circumstances and individuals who privilege expectancy over value should exhibit a preference for a unifinal means.

A recent series of experiments by Orehek and colleagues (2012) investigated this possibility. Specifically, these authors explored the notion that in a multifinal configuration, the preference for a unifinal versus a multifinal means will be moderated by individuals' regulatory mode, that is, by their inclination to highlight in their goal-pursuit *locomotion* or *assessment* modes known to differ in their relationship to expectancy versus value considerations. In what follows, the locomotion and assessment modes are briefly characterized.

Locomotion and assessment modes. People's self-regulation toward their objectives is known to embody two general aspects: (a) *assessment* of discrepancies between current and desired states and of the best means of bridging these discrepancies, and (b) direct action of implementing the chosen means and *locomoting* toward the desired end states (i.e., goals; Higgins, Kruglanski, & Pierro, 2003; Kruglanski et al., 2000). Whereas the assessment and the locomotion functions are inevitably involved in all self-regulation, there exist stable individual and situational differences in the degree to which locomotion or assessment are prioritized. Such differences in emphasis could significantly interact with preferences for unifinal versus multifinal means.

The *locomotion* mode refers to orientation toward movement. The dominant consideration has to do with how *quickly* and *fluidly* an activity can be performed. The *assessment* self-regulatory mode concerns orientation toward critical evaluation of the available alternatives to do the "right" thing. The dominant consideration in this case has to do with the perceived "goodness" of one's choice. Because the locomotion orientation is aimed at movement, its activation should prioritize expectancy (of getting there) over value. Accordingly, individuals high on locomotion should prefer a unifinal means (perceived to be more instrumental, hence yield higher expectancy of attainment) over a multifinal one.

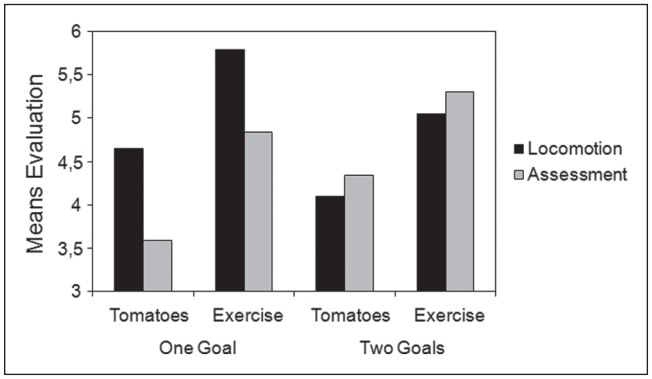

Figure 7. The effect of regulatory mode and goal number on explicit means evaluation

Conversely, because the assessment orientation is aimed at selecting the best option according to its overall value, high assessors should prefer a multifinal over a unifinal means.

Orehek and colleagues' (2012) replicated and extended Zhang and colleagues' (2007) research by incorporating into the design the variables of locomotion and assessment. Thus, in one study, participants first completed dispositional measures of locomotion and assessment (Kruglanski et al., 2000). Subsequently, they read essays describing the advantage(s) of consuming tomatoes. Participants read either about one advantage of consuming tomatoes (*unifinal* condition) or about two advantages of consuming tomatoes (*multifinal* condition). As in Zhang and colleagues' (2007, Study 1) procedure, the advantages of consuming tomatoes were listed as (a) preventing cancers and/or (b) preventing degenerative disease of the eye.

Consistent with the present analysis, in the *unifinal* condition, locomotion predominance (the degree to which individuals' locomotion scores exceeded their assessment scores) was positively correlated with the evaluation of (the means of) tomato consumption. In contrast, in the multifinal condition, assessment predominance was positively correlated with the evaluation of tomato consumption. It appears then that individual differences in the locomotion orientation predict a preference for unifinal means, whereas individual differences in the assessment orientation predict a preference for multifinal means. In their second study, Orehek and his collaborators (2012) manipulated the regulatory modes of locomotion and assessment rather than measuring them as individual difference variables. Again, participants in the locomotion condition evaluated more positively the means in the unifinal condition, whereas participants in the assessment condition evaluated more positively the means in the multifinal condition. These results are summarized in Figure 7.

In an additional study, rather than attaching the multifinal means to two goals, Orehek and colleagues (2012) attached it to three goals. Participants in the *unifinal* condition listed one goal that computers can serve, while participants in the multifinal condition listed three goals. This study also differed from

its predecessors in the way that the evaluation of the means was now tapped via a modified affect misattribution procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005). Using this methodology, it was found that in the locomotion condition, participants' implicit evaluation of computers was more favorable in the unifinal versus the multifinal condition. By contrast, in the assessment condition, participants' implicit evaluations of computers were less favorable in the unifinal versus the multifinal condition. The next study by Orehek and collaborators (2012) found that participants in an experimentally induced locomotion condition reported being thirstier when the linkage between drinking water and a single goal (*having energy*) was strengthened than when the linkage between drinking water and two goals (*having energy* and *having clear skin*) remained equal. In contrast, participants in the assessment condition reported being thirstier when drinking water served two goals equally than when the linkage between drinking water and one of its putative goals was experimentally enhanced. Finally, Orehek and colleagues' (2012) last study found that participants in the *locomotion* condition were less likely to select a laser pen when its multifinal function (*pointing* and *writing*) was apparent than when it was not. To the contrary, participants in the assessment condition *were more likely* to select the laser pen when their attention had been drawn to the multifinal function. In summary, research by Orehek and colleagues (2012) provides additional evidence for the expectancy/value trade-off immanent in the multifinal option—and it identifies a moderating condition, inherent in the regulatory modes of locomotion and assessment, which determine the preference for a multifinal versus unifinal means where both are available. To reiterate, individuals higher on the locomotion (vs. assessment) dimension, or in a momentarily induced *locomotive state of mind*, privilege the expectancy factor perceived as better served by the unifinal (vs. the multifinal) option. In contrast, individuals higher on the assessment dimension or in an *assessment state of mind* privilege the value factor better served by the mutifinal option. In general, these findings suggest that the multifinal means will be preferred, in particular, when value (vs. expectancy) is at a premium and when expectancy considerations do not enter (e.g., when goal attainment is all but assured).

Intrinsic Motivation. We assume that the strength of association between a means and a goal determines the immediacy with which the means brings the goal to mind creating a sense of *fusion* between the two, or an experience that the means and the goal are one. This may create the feeling of pursuing the goal via the particular means as *intrinsically motivated* (Shah & Kruglanski, 2000) and of implementing the means as "an end in itself." Based on this logic, we assume that the upper bound of instrumentality, the *expectancy* that the means will procure the goal, is the sense of intrinsic motivation, the feeling that the means and the goal *are one*, or that the activity is an *end in itself*. Because perceived instrumentality of a multifinal (vs. unifinal) means is reduced by the dilution effect, it may be hypothesized that pursuit via a unifinal (vs. multifinal) means will display to a greater extent characteristics of an intrinsically motivated activity.

Several lines of work are relevant to this derivation. In an early study, Shah and Kruglanski (2000) measured the association between means and goals by assessing the speed with which the means as a (subliminal) prime in a lexical decision task activated the goal serving as the lexical target. It was found that strength of the means-goal association was positively related to such indices of intrinsic motivation as self-reported enjoyment of the activity and the reported frequency of engagement in the activity.

A different index of intrinsicality, or the degree of "mesh" between the activity and the goal, concerns the degree to which properties of the goal are transferred to the means in question. This question was investigated in a series of studies by Fishbach, Shah, and Kruglanski (2004) exploring whether strength of an association between goals and means moderates the *transfer* from goals to means of various motivational properties, such as *degree of commitment*, and the *magnitude* and *quality* of affect. In support of this idea, Fishbach and collaborators (2004, Study 1) found that the correlation between magnitude of positive affect associated with participants' goals (e.g., a goal of "becoming educated") and the magnitude of affect associated with a corresponding means (e.g., a means of "studying") depended on strength of the goal-means association as assessed by the degree to which the goal primed the means. Moreover, the very same activity or means was experienced differently depending on the goal with which it happened to be associated. Participants in one study (Fishbach et al., 2004, Study 2) were primed either with the goal of "weight watching," or of "food enjoyment," or with no goal at all (control condition). They then rated the extent to which they experienced positive and negative emotions when they ate (a) vegetables, (b) fruits, (c) chocolate, (d) cakes, (e) fries, and (f) hamburgers. The low calorie food was experienced equally positively in the weight watching, control, and food enjoyment conditions. However, the high calorie food was associated with less positive emotions in the weight watching compared with the control condition and with the most positive emotions in the food enjoyment condition.

Fishbach and colleagues (2004, Study 3) investigated further whether the specific quality of positive affect, apart from its magnitude is also transferred from goals to means. In this experiment, participants listed either an "ought" goal or an "ideal" goal (i.e., a duty or obligation vs. a hope or aspiration). Higgins' (1987, 1997) research suggests that attainment of ought goals gives rise to such emotions as relief, calm, and relaxation. By contrast, attainment of ideal goals gives rise to the emotions of happiness, pride, or enjoyment. Participants listed three acquaintances believed instrumental to attainment of either the ought or ideal goal (i.e., to constitute "social means" to the goal in question). Following Higgins, King, and Mavin (1982), it was assumed that the order in which the acquaintances are listed

reflects the strength of their association to the goal. Participants then rated their expected emotions following goal attainment using three items related to ideal-type affect (happy, proud, enjoy) and three items related to ought-type affect (relieved, calm, relaxed). It was found that the affective qualities associated with ideal or ought goals were transferred to individuals related to these goals' attainment, and that the degree of transfer was proportionate to the order in which these persons were listed. Thus, for an ideal-type goal, ideal-type affect (and not ought-type affect) felt with respect to the first person listed was more pronounced than ideal-type affect felt with regard to the second person listed, which in turn was more pronounced than the ideal-type affect felt with respect to the third person listed. Similarly, for the ought-type goal, the corresponding (ought-type) affect, and not the ideal-type affect, was stronger with respect to the first two persons listed than with respect to the third person listed.

Viewing intrinsic motivation through the lens of a means-goals association offers a new perspective on the classic undermining effect of extrinsic rewards on interest in an activity (Deci, 1975; Deci & Ryan, 1985; Kruglanski, Friedman, & Zeevi, 1971; Lepper, Greene, & Nisbett, 1973). From the present perspective, linking an activity with a tangible reward may forge an association between the activity and the original, single goal. Such additional goal may render the activity multifinal: In addition to performing the activity for one goal with which it is completed "meshed" and, hence, experienced as intrinsic, the activity is now seen as serving a different goal as well, represented by the external reward attached to the activity (e.g., money). One consequence of such multifinality may be *dilution* of the association strength between the activity and the intrinsic goal it may afford (Orehek et al., 2012; Zhang et al., 2007). When the tangible reward is ultimately withdrawn, the tendency to engage in the activity may be reduced because the association of the activity with the intrinsic goals has been attenuated.

A recent study by Lafrenière, Bélanger, Kruglanski, and Vallerand (2011) yields support for this notion. Undergraduate participants were presented with either one goal (*learning*) or two goals (*learning* and *making money*) and a means that can fulfill their goal(s) (*studying*). Participants' perceived instrumentality of studying to the goal of learning was measured as was their self-reported intrinsic motivation for studying, assessed via the Academic Motivation Scale (Vallerand, Blais, Brière, & Pelletier, 1989). Results indicated that given two goals, individuals reported less intrinsic motivation to study than given a single goal. Of particular interest, this effect was fully mediated by the perceived instrumentality of the means of studying to the goal of learning. These results are consistent with the notion that when a means is associated with two goals, the felt association between it and either goal is diluted (Zhang et al., 2007) and, correspondingly, so is intrinsic motivation to engage in the activity represented by that means.

General Discussion

The Present Theory

A ubiquitous feature of everyday living is the preponderance of goals that vie for people's attention. These crowd individuals' schedules and place competing demands on their resources. Especially in today's quick-paced technological societies, the number of tasks on people's "to do" lists seems vast and growing. This often engenders a sense of pressure and stress, of being pulled in opposite directions and overwhelmed by uncontrollable challenges. People's professional lives, careers, and interpersonal relationships increasingly involve innumerable others asserting their presence and relevance through diverse social media such as email, Facebook, or Twitter. National and international travel too has become an inseparable counterpart of life for many persons, compounding goal stress and posing formidable problems of coordination and time management. Whereas many of the goals that drive people's actions are overt and explicit, others operate "below the radar," staying at the back of people's minds while exerting palpable impact on their judgments, feelings, and behavior (for reviews, see Fishbach & Ferguson, 2007; Kruglanski & Köpetz, 2009). Faced with the strain of experiencing different concerns simultaneously, individuals' may try their hand at "multitasking," accomplishing several things in parallel. One way of doing so is through *multifinal* means that serve a plurality of objectives. The present article explored the quest for multifinal means and elaborated its various features, trade-offs, and implications. Our theoretical framework distinguished between *substantive* and *structural* aspects of multifinality and described their interplay: The substantive aspect concerns the motivational meaning attached to the *goal* and *means* categories. The structural aspect concerns their interconnectedness and, in particular, the number and strength of links between the multifinal means and its goals. The interplay between these aspects involves *structure-to-substance* inferences, exemplified by deductions about instrumentality of a means from strength of the link connecting it to a goal (Zhang et al., 2007). Against the backdrop of these distinctions, our theory of multifinality departed from the common assumption that preference for a means (i.e., a goal-directed activity) is product of the goal value and the expectancy that the means will procure the goal. We hypothesized further that where value considerations are salient, there will be preference for multifinal versus unifinal means. Support for this derivation came from a series of studies by Chun and colleagues (2011), where the preferred means to a focal goal was one that also served currently active alternative goals. This work also showed that the *preference* for a multifinal means can be unconsciously driven and that individuals are often unaware that their means choice for a given explicit goal is affected also by implicit background goals this means may serve. The tendency to maximize value was further hypothesized to prompt a proactive *quest* for multifinal

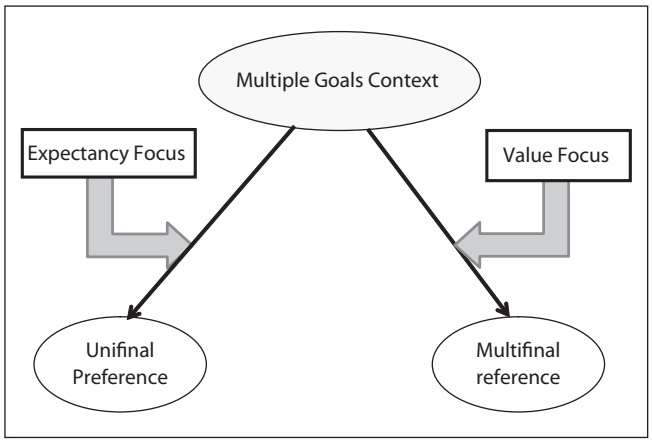

Figure 8. Determinants of means preference in a multiple goal context

means. This, in turn, was shown to restrict the consideration set of means to a current focal goal (Köpetz et al., 2011), a tendency moderated by asymmetric *commitment* to one of the goals in the set, and by *feasibility* of finding multifinal means to the several active goals. A straightforward implication of our theory is that where some of the goals in the multifinal set are attained through other means, and hence *deactivated*, preference for the multifinal means is proportionately reduced; this proposition was supported by the studies of Chun et al. (2011) and Bélanger et al. (2011).

We theorized additionally that preference for a multifinal means may be tempered by concern with attainment expectancy. This suggests that the multifinality configuration entails a value expectancy trade-off mediated by a *dilution effect* whereby the links between a multifinal (vs. a unifinal) means and the attached goals are weakened (see Anderson, 1983), which, in turn, may suggest the inference that the multifinal (vs. the unifinal) means is less instrumental to the goal. The series of studies by Zhang and colleagues (2007) furnished consistent support for this possibility and demonstrated that where only one of the several goals served by a multifinal means is activated, that is, where the value add-on accruing to the multifinal means is neutralized, individuals actually prefer the unifinal over the multifinal means because of its perceived instrumentality advantage.

The above discussion suggests that circumstances and individuals that privilege value over expectancy should prompt a preference for a multifinal (over a unifinal) means to a given focal goal, whereas circumstances and individuals who privilege expectancy over value should prompt a preference for a unifinal means. These relationships are depicted in Figure 8. In support of this analysis, research by Orehek et al. (2012) found that for individuals who are (generally or temporarily) high on the locomotion dimension, concern with expectancy predominates over concern with value (Kruglanski et al., 2000), and hence they typically prefer unifinal over multifinal means. Conversely, for individuals who are (generally or temporarily) higher in assessment, concern with value trumps concern with expectancy, and hence they tend to prefer a multifinal (value maximizing) means over its unifinal (expectancy maximizing) alternative.

Finally, because of its perceptual "fusion" with the goal, pursuit of a unifinal (vs. multifinal) means should exhibit the characteristics of an intrinsically motivated activity. This notion was supported in studies by Shah and Kruglanski (2000), Fishbach and colleagues (2004), and Lafrenière and colleagues (2011) described earlier.

Multifinality as an Explanatory Construct

Because of its general concern with goals and means of whatever type, the multifinality concept holds a considerable integrative potential and affords new insights into classic findings and fundamental phenomena in motivated cognition and self-regulation. In what follows, we discuss a number of major such phenomena.

Goal Priming Effects. The multifinality analysis offers insights into implicit goal priming phenomena that in the last two decades have stimulated considerable work by social cognition researchers (for reviews, see Fishbach & Ferguson, 2007; Morsella, Bargh, & Gollwitzer, 2009; Moskowitz & Grant, 2009). In a seminal goal priming study by Bargh and colleagues (2001), an implicitly activated goal (cooperation, achievement) was thought to be linked directly to the appropriate goal-serving behavior (e.g., concession making, investment of effort) and to effect its performance through an ideomotor process of the "perception-behavior expressway" (Dijksterhuis & Bargh, 2001). Although the ideomotor mechanism is reasonable and intriguing, the multifinality notion implies a somewhat different, more calculated, and flexible process (Hassin, Bargh, & Zimerman, 2009), whereby the primed behavior is performed not merely because of its activation by the goal construct but also because it promises to maximize value in light of the individual's other, currently active, objectives.

Specifically, multifinality theory suggests that value considerations should influence preferences also in *explicit choice contexts* where several different behavioral options are activated to a more or less equal degree. In such situation, the option linked to the primed goal may not claim an obvious activation advantage over the remaining options. In other words, if differential activation is what accounts for goal priming effects, such effects should not occur in a context where all the relevant options are equally activated, or salient. In contrast, according to multifinality theory where value considerations matter, despite the equal activation of different choice options, the option consistent with the primed goal should still be preferred because of the value advantage it offers over the remaining options. In this vein, studies by Chun and colleagues (2011) and by Köpetz and collaborators (2011) find robust multifinality effects where

the different choice options (different swathes of material, different drinks, or different foods listed) serving as *uni-* or *multi*final means to various goals are *explicitly presented* to participants, and hence are unlikely to appreciably differ in degree of activation.

Furthermore, research by Chun and colleagues (2011) and by Bélanger and colleagues (2011) suggests that where a background goal served by the multifinal means (e.g., self-enhancement, self-identification) is attained by an alternative means, the appeal advantage of the multifinal over the unifinal means disappears even where the former means is clearly present and is fully adequate for serving the focal goal (choosing a well constructed paper, or a gift mug for oneself). In short, considerations of goal value need to be taken into account to explain means preferences where the means options are explicit and overt.

Regulatory Fit. Recently, Higgins and colleagues (2003) discovered the phenomenon of *regulatory fit*, whereby choices are made more attractive if they fit one's regulatory orientation (such as the regulatory focus orientation of promotion or prevention). In a classic experiment on this effect, the authors had participants choose between an attractive mug and a less attractive pen. All participants selected the mug, as expected, yet consistent with the "value from fit," notion participants with a predominant *promotion* orientation and given *a promotion framing* (think of how it would feel *to get* the mug), representing a fit condition, assigned to the mug a significantly higher monetary value than *promotion* participants given a *prevention framing* (think of how it would feel *not to* get the mug), representing an absence of fit. Similarly, prevention participants given a prevention framing (the fit condition) assigned a higher monetary value to the mug than prevention participants given the promotion framing (representing an absence of fit).

These intriguing findings can be interpreted from the multifinality perspective. Thus, Higgins and colleagues' (2003) participants may be assumed to possess two goals in the situation they confronted: An *outcome* goal of attaining an attractive object (the mug) and a *process* goal of approaching it in a fitting manner (i.e., in a prevention manner for prevention-oriented individuals and a promotion manner for a promotion-oriented individuals). Attainment of both goals may produce greater overall satisfaction, resulting in an assignment of higher value to the mug than a mere attainment of the outcome goal (obtaining the mug), while leaving the process goal unfulfilled if not downright frustrated (i.e., doing it in a manner that does not fit one's regulatory focus).

The present, multifinality-based, reinterpretation of the Higgins and colleagues' (2003) findings suggests that it should be possible to conceptually replicate their results with two *outcome goals* served by the same object (i.e., means) and also show that where one goal is attained via a different means, the monetary value advantage of such multifinal object is eliminated. Research by Bélanger and colleagues (2011) described earlier yields results consistent with this implication showing that the added value assigned an attractive mug affording an identification with one's university is eradicated if identification had been accomplished alternatively.

Motivated Reasoning. The multifinality paradigm offers a novel understanding of motivated biases in reasoning. This fundamental phenomenon harks back to Freud's (1937) notion of rationalization and other defense mechanisms, to Festinger's (1957) concept of dissonance, motivational biases in attribution (Kunda, 1990), and notions of motivated reasoning (Dunning, 1999; Kunda & Sinclair, 1999). According to the multifinality framing, in forming a judgment, individuals may strive to satisfy two goals. The focal and explicit goal of judgment is veridicality; by definition, a judgment is assumed to represent a state of affairs the individual believes to be true. In addition, however, judgments often might aim to attain "biasing" background goals as well, that is, form judgments that are self-enhancing, esteem promoting, or optimistic in another way. Where such biasing goals are present, individuals may strive to find multifinal means, that is, form a judgment that while serving those goals concomitantly serves also the focal goal of veridicality or validity, thus delivering truth (Higgins, 2012). Crucial to the motivated bias phenomenon, "finding" such means may amount to the *perception* that such means was found, that is, perceiving a means as instrumental to the goal of truth *because* it is instrumental to the ulterior biasing goal active in the situation.

The multifinality lens on motivated reasoning has implications affording a novel way of viewing this phenomenon. Thus, consistent with our theory, it suggests that should the biasing (background) goal be attained through an alternative means, a preference for the multifinal means, that is, a judgment that apart from seeming valid also serves the biasing goal, would be reduced. Evidence for these implications has been furnished by Steele's (1988; Steele & Liu, 1981) work on self-affirmation. Specifically, Steele and Liu have discovered that dissonance reduction, that is, forming a multifinal judgment that besides serving the validity goal preserves one's self-esteem (undermined by a prior counterattitudinal act), does not happen if the esteem goal was served alternatively by an opportunity for self-affirmation.

The present theory suggests, additionally, that the tendency to exhibit a motivated bias depends on the degree to which the multifinal judgment (i.e., the judgment serving the biasing goal) is perceived as maximally instrumental to the goal of validity as well. Where a different judgment is perceived as more valid, the individual may be compelled to give up on the multifinal one, and leave the biasing goal unattained owing to "reality constraints" (Kunda, 1990). In present terms, where no multifinal judgment is feasible serving the validity and the biasing goals, the latter goal may be neglected or inhibited. This is consistent with findings of Köpetz and collaborators (2011, Study 2) wherein the focal goal was prioritized over the alternative goal, which was,

therefore, suppressed. It follows that the occurrence of motivated biases in judgment should depend on the relative magnitudes of the validity (or accuracy) and the biasing goals as well as the instrumentality of possible judgments to each goal, determining the feasibility of rendering a multifinal judgment serving both.

Specifically, our analysis suggests that where a judgment incompatible with the biasing goal is seen as clearly more instrumental to the goal of truth—representing high "reality constraints" in Kunda's (1990) terms—"spinning" one's judgment in a motivationally desirable direction may be hard to do. However, hard need not mean impossible. Moreover, the low instrumentality of the biased judgment to the goal of truth (i.e., low *expectancy* that it is veridical) may be overcome if the value of the biasing goal was sufficiently high. Pertinent to this analysis is a study described by Kruglanski et al. (2012). In this experiment, participants were presented with two brands of tea and were asked to evaluate which is tastier. One tea was labeled "everyday smooth tea" and the other, carrying the implication of healthfulness, a "nutrition essential tea." In one experimental condition, the two teas were essentially identical in taste. This made for a highly ambiguous informational stimulus that readily lent itself to a motivational distortion, representing a case of low reality constraints (Kunda, 1990), hence low difficulty of reaching a motivationally biased judgment. In another condition, the nutrition essential tea was substantially diluted (20% water was added), making it appreciably less tasty than the undiluted everyday smooth tea. This manipulation rendered the informational stimulus relatively unambiguous, defining a case of high reality constraints and making it relatively difficult to bias one's tastiness judgments in favor of the nutrition essential tea.

Crosscutting the stimulus ambiguity manipulation, we implemented a goal activation manipulation in which half of the participants were primed with a *health goal* (via a scrambled sentence technique), and the other half, in the *neutral prime* condition, were not. In the neutral goal condition, the nutrition essential tea was chosen to a significantly lesser degree in the unambiguous (vs. ambiguous) stimulus condition (where it was selected, appropriately, about 50% of the time); this attests to the efficacy of our manipulation of appreciable reality constraints. Of greater interest, where the health goal was primed, the nutrition essential tea was chosen preponderantly not only in the ambiguous, low constraint, condition but also in the unambiguous, high reality constraint, condition. This suggests that where the biasing goal value is sufficiently high (namely, the goal of viewing the healthful tea as tastier), considerable reality constraints can be overcome and the biasing goal may be achieved through perceiving the less veridical (less instrumental to the goal of truth), albeit more motivationally desired judgment (more instrumental to the biasing goal) as more veridical.

Instability of Preferences and Variety Seeking. The inconsistency of human preferences has been hailed by many observers. In this vein, Amos Tversky (1969) famously observed that individuals "are not perfectly consistent in their choices. When faced with repeated choices between x and y, people often choose x in some instances and y in others" (p. 31). In addition, he added that "(It seems) that the observed inconsistencies reflect inherent variability or momentary fluctuations in the evaluative process." From the present perspective, such fluctuations could arise because although the same set of explicit options (or means to one's focal goal) may exist across situations, activated background goals may vary from one context to another. Thus, in one situation, option "x" may be multifinal with regard to the focal goal and an active background Goal A, whereas in another situation, option "y" may be multifinal with regard to the focal and a different background Goal B. If so, consistency of preferences may exist where not only the explicit or focal goal (assumed to be served by the choice among options) was constant across instances but also the implicit background goals. This possibility could be fruitfully explored in future research. Inconsistency of preferences is closely tied to the issue of *variety seeking* in consumer behavior. The variety-seeking research suggests that people may introduce variety among familiar items within the same domain, for example, toothpastes, restaurants. Traditionally, it has been assumed that the motivation underlying variety seeking is the need for stimulation. In these terms, variety seeking was seen as a biased behavioral response driven by the subjective utility to the individual of variation per se, independent of the instrumental or functional value of the purchase items at hand (Van Trijp, Hoyer, & Inman, 1996). It soon became apparent, however, that other goals, activated by specific contexts may also induce variety seeking (Kahn, 1995; Ratner, Kahn, & Kahneman, 1999). In other words, variability in consumer choices in a given category may vary not necessarily or exclusively because of the need for stimulation, but because different implicit goals, including the need for stimulation, may be activated in different purchasing situations (and/or be chronically active for an individual). Thus, the multifinality perspective offers new insights into factors that should affect variety seeking, such as the perceived instrumentality of the various choice options to the focal goal of a given purchase, its instrumentality to the background goals, and the relative magnitudes (i.e., the values) of the focal and the background goals.

Multifeatured Products. Admittedly, the appeal of multifinal means has been widely recognized by manufacturers. The food industry, for example, is producing a large array of diet foods that promise to deliver taste while reducing one's caloric intake, allowing one to maintain (or acquire) a slim figure at the same time as experiencing food enjoyment. Similarly, the fitness industry has come up with energy enhancing and muscle building, products that also promise to restore one's mineral balance without compromising on taste. The electronic industry has developed products equipped with a variety of features, cell phones that serve as

cameras, computer terminals, personal calendars, and music boxes (e.g., Apple's iPhone) "all in one."

Such practices are not surprising as marketing researchers have repeatedly found that when consumers face a choice between different models of a product, a majority tends to choose the model with the most features (Thompson, Hamilton, & Rust, 2005). Research on consideration set formation by Paulssen and Bagozzi (2005) speaks more directly to the possibility that consumers' choice may be motivated by a quest for multifinal means to attain coactive goals. Specifically, they found that consumers' choice is not only determined by the extent to which specific products satisfy a focal goal (e.g., a BMW satisfies the transportation goal) but also other implicit goals, for example, having to do with power, aesthetic pleasure, or social recognition.

Multifinality theory offers additional insights into the conditions in which multifeatured products would be of greater or lesser interest. For one, it suggests that if the background goals that the product was assumed to serve were gratified otherwise (e.g., the sense of social recognition was afforded by a different product or by success at an important objective), the preference for the product would be reduced. Conversely, increasing the magnitudes of those additional goals should make the multifeatured product more appealing.

Of even greater interest, the perceived utility of the multifeatured product could be reduced via the dilution mechanism discussed earlier. Research on "feature fatigue" (Thompson et al., 2005) is consistent with this notion. Their study shows that increasing the number of product features (i.e., a digital video player with 7 vs. 21 features) increases consumers' ratings for the product *capability*, but decreases the ratings for the product's *usability*. Authors conclude that what appears to be attractive in *prospect* does not necessarily appear to be good in *practice*, possibly because the perceived instrumentality of the product to each of its functions is diluted by the number of functions the product is assumed to serve. Considered in terms of the multifinality theory, the research by Thompson and his colleagues (2005) suggests that in evaluating and possibly choosing a product, consumers tend to focus on value, conferring advantage on multifeatured products, but in the phase of utilization, consumers focus on instrumentality, an aspect on which multifeatured products may seem inferior.

Optimal Distinctiveness. An influential concept in social psychology has been Brewer's (1991) notion of *optimal distinctiveness*. According to the underlying theory, individuals have two seemingly incompatible needs: (a) to "stand out from the crowd" and be granted special recognition, and (b) inclusion within a larger social entity that augments one's sense of power and security. An "optimal identity," therefore, is one that satisfies both needs and in this way is multifinal: By adopting a social identity that ties one's individuality to a given group (e.g., of Americans, Democrats, or Catholics), the individual gratifies the goal of *inclusion*, as well as of *distinctiveness* stemming from the differences between one's ingroup and other groups (e.g., Frenchmen, Republicans, or Protestants; Brewer, 1991, 2003; Sheldon & Bettencourt, 2002). According to Brewer, individuals define themselves in terms of social identities that are "optimally distinctive" and tend to reject identities, which are either too assimilated or too different. The equilibrium between the two is assumed to be dynamic and to continuously correct deviations from optimality introduced in specific social contexts (Brewer, 1991, 2003).

In multifinality theory terms, a social identity that an individual assumes is a means to goal(s) active in a situation. An optimally distinctive identity is multifinal in gratifying at once the goals of distinctiveness and inclusion. Of greater interest, multifinality theory identifies the conditions under which deviations from "optimality" (i.e., from preferences for a multifinal identity) may occur. For instance, if the inclusion goal was accomplished via alternative means (e.g., others' expressions of acceptance, and care), one may opt for an identity that emphasizes one's distinctiveness, for example, highlight one's personal attainments and successes, and deemphasize one's group identity. Similarly, if one's sense of distinctiveness were highlighted (e.g., one stood out from everyone else in a situation), one may be motivated to pursue the inclusion/assimilation goal more exclusively, hence deviating from multifinal "optimality."

Furthermore, the *dilution* mechanism described earlier would suggest that where goals of distinctiveness and assimilation were salient, individuals' sense that each is attained via her or his self "optimally distinctive" self-definition should be somewhat weaker as compared with the case where one of these concerns was singularly active. These issues too could be profitably addressed in further research.

Perceived Unavailability of the Multifinal Option. Research by Köpetz and collaborators (2011, Study 2) described earlier addressed the case where feasibility of finding the multifinal option is low. Indeed, several intriguing psychological phenomena pertain to the case where several goals are active, yet no multifinal means seems available that affords the concomitant pursuit of all those goals. In such situations, participants may pursue the goals sequentially starting with the dominant objective in the situation.

Pluralistic ignorance. Consider the phenomenon of *pluralistic ignorance*. According to Prentice and Miller (1993) this term designates "a psychological state characterized by the belief that one's private attitudes and judgments are different from those of others, although one's public behavior is identical" (p. 244). In an example given by the authors, no one in a class poses a question (despite the teacher's explicit invitation) although all are confused by the material. From the present theoretic perspective, students in this situation have two goals: (a) of *learning* and (b) of *preserving self-esteem* by appearing smart and refusing to admit one's failure to grasp the teacher's presentation.

The situation described offers no way of attaining both goals at once: Asking a question serves the learning goal yet undermines the esteem goal (by appearing confused and unintelligent), whereas refraining from asking allows one's esteem to be maintained at the expense of the learning goal. In the case at hand, students obviously prioritize the esteem goal by refraining from asking questions despite their confusion. Yet, because others' states of mind are inaccessible to outside observers (other students), actors' behavior may well appear multifinal. Incapable of knowing how their fellow students feel about the material, the (confused) observers only know how they behave; their desistance from questioning the teacher suggests the inference that they perfectly follow what the teacher presented, hence that they are smart (hence worthy of esteem) while also having benefited from the presentation, hence attaining their learning goal as well.

Understanding pluralistic ignorance from the multifinality perspective suggests conditions under which the effect might be eliminated. Thus, if a norm could be established whereby posing questions attested to admirable courage and initiative, doing so would serve both the goal of learning and of esteem maintenance. In such circumstances, observers could accurately gauge (contrary to being ignorant) as to whether actors understood the class materials, simply by drawing the proper inference from their interrogatory behavior.

The disjunction effect. In a classic article, Tversky and Shafir (1992) identified the *disjunction effect* as the tendency of individuals to postpone their decision on a given matter until they received information on another matter, although the latter information apparently had no relevance to the decision. Imagine the following situation. You have just taken a comprehensive exam, and you do not know whether you have passed. If you have not passed, you have to take the exam again in a month. Now, you have the opportunity to buy a 5-day vacation package to Hawaii. Which would you prefer to do? (a) buy the package, (b) not buy the package, (c) pay a fee to wait until you know whether you passed the exam. The majority of people opt to pay the fee to wait. What is interesting is that (other) people are asked what they would do if they passed the exam, the majority say they would buy the vacation package, and similarly, if they failed the exam, the majority say they would buy the vacation package. It might appear, then, that the individuals are opting to wait for information that they apparently consider irrelevant to their subsequent decision, as they are planning to taking the trip either way.

A multifinality analysis may elucidate this puzzling phenomenon and suggest boundary conditions for its occurrence. Actors in the situation apparently have two goals: (a) to reduce uncertainty regarding their exam outcomes and (b) to enjoy a Hawaii vacation. It seems reasonable to assume that participants regarded these two ends as incompatible under some outcome conditions, and hence contingent on each other and impossible to attain simultaneously. Thus, participants might have been uncertain whether they should go on vacation in case of failure because of the added study time they would have gained by cancelling the trip. Under these conditions, the majority of participants apparently decided to proceed sequentially (or disjunctively) and take care of the uncertainty reduction goal first. Recall that it was *other persons*, not the original choosers, who had the opportunity to think things through and decide that they would have taken the trip regardless. If so, clarifying to participants that purchasing the trip is independent of the exam outcome and that it represents the multifinal option as it affords the vacation goal as well as the uncertainty reduction goal (that would be attained anyway once the exam results were announced) might eliminate the curious disjunction effect exhibited by Tversky and Shafir's (1992) participants, and prompt their majority to purchase the trip package in advance of knowing their exam results.

Conclusion

As the above discussion attests, multifinality phenomena are ubiquitous within the broad domains of goal-directed behavior, self-regulation, and judgment and choice phenomena. To twist Moliere's[2] classic aphorism, self-regulation theorists may have been talking *multifinality* all along without explicitly noticing it. By considering multifinality's features overtly, the present framework offers a fresh perspective and promises new understandings of a variety of well-tilled issues in human motivation, decision making, and action.

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Notes

1. Of interest, the dilution mechanism could underlie additional social cognitive phenomena besides multifinality. Consider, for instance, a configuration of equifinality, wherein several different means are connected to the same goal. Because of dilution, each of such equifinal means may be perceived as less instrumental to the goal than a unifinal means serving the goal uniquely. An indirect evidence for this possibility comes from research by Kruglanski, Pierro, and Sheveland (2011) who found that multiplicity of means to a goal reduces individuals' commitment to each means. Furthermore, it should be the case that each of multiple *obstacles*, or barriers to goal attainment, would be perceived as less detrimental as compared with a single such obstacle. Finally, the dilution effect could underlie the classic discounting principle identified by Kelley (1972),

whereby the perceiver's confidence in the causality of a given factor in producing the effect is related inversely to the number of plausible such factors. Conceivably, the discounting effect is mediated by a diluted cognitive association between each of the causes and the effects. These possibilities merit future research attention.

2. In Moliere's play "the Bourgeois Gentleman," where Monsieur Jordain asserted that he spoke prose all his life without realizing it.

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