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Goal Systemic Effects in the Context of Choice and Social Judgment

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Abstract

The present paper features a novel approach to motivation and self-regulation couched in conceptual terms of goal systems theory (Kruglanski et al., 2002). Goal systems theory adopts a cognitive view of motivation and highlights the interrelations of goals and means. The cognitive aspects of the theory have to do with the architecture of cognitions, and the finality of cognitive resources. The motivational aspects of the theory relate to the relation of the goal/means constructs to the dynamics of action and the affective phenomena that accompany goal pursuit. A goal systemic analysis not only affords a better understanding of classic self-regulatory phenomena, but also offers new insights into various psychological problems such as choice and judgment.

Almost two decades have passed from the publication of Fiske and Taylor's (1991) seminal text on social cognition. Chapter after chapter in that volume described the state of the art research of the time featuring a 'cognitive miser' view of a social perceiver driven primarily by efficiency concerns and the desire to spend the least possible effort on knowledge formation. As the authors aptly noted, however, other goals and motives beyond those of efficiency and least effort were often ignored. This state of affairs didn't last long. In the subsequent two decades, there has been a virtual explosion of research and theory on a variety of motivational variables and their relations to cognition (for review and discussion, see Dunning, 1999; Kruglanski, 1996; Kruglanski et al., 2002, 2003; Kunda & Sinclair, 1999). A recent wave of research on this topic represents (what we have termed) the *New Look in Motivation* (Kruglanski & Kőpetz, 2009). This new approach eschews the view of motivational and cognitive explanations as antagonistic and argues for a *motivation as cognition* framework that views motivational constructs as cognitively represented hence abiding by the general principles that govern all cognition. (Morsella, Bargh, & Gollwitzer, 2009; Kruglanski & Kőpetz, 2009, forthcoming for reviews).

The goal systems theory developed by Kruglanski et al. (2002) belongs in this latter category of research. It outlines a dynamic perspective on motivated

action centered around the notion of *goal systems*. The latter are defined as mental representations of motivational networks composed of interconnected goals and means. In goal systemic terms, motivational phenomena are viewed as produced by cognitive principles in their specific application to motivational constructs. Premised on the notion that the cognitive treatment confers conceptual and methodological advantages for the study of motivation the research program inspired by the goal systems theory affords new insights into problems of self-regulation and self-control.

In this paper, we treat goal systems theory as an integrative framework capable of bridging major self-regulatory phenomena with a broad range of motivational effects in various areas of psychological functioning. As an advance organizer, we first outline the historical background against which the theory of goal systems was proposed. We subsequently outline the substance of the theory, and consider its implications for the domains of choice and social judgment. Although the impact of motivation on these traditionally cognitive domains of psychological functioning has been widely acknowledged and investigated within the motivated cognition approach (Dunning, 1999; Kruglanski, 1996; Kunda, 1990; Kunda & Sinclair, 1999), very little research has explicitly described how motivation impacts judgment and decision making. Our paper argues that goal systems theory offers a theoretical approach and specific testable hypotheses, supported by preliminary data, which may offer an answer to this question.

I. Historical Background: Social Psychology's Shifting Paradigms of the Motivation/Cognition Interface

The early phase of theorizing about motivation and cognition was dominated by a *separatist approach* where motivation and cognition were viewed as concepts with unique functions and where motivational and cognitive explanations of social judgment were juxtaposed to one another (e.g., as exemplified by the dissonance vs. self-perception debate (Bem, 1972)) in attitude change, or the question whether putative ego-defensive tendencies (cf. Kelley, 1987) in attribution are authentic vs. reflecting the effects of cognitive expectancies (Miller & Ross, 1975).

Motivation was often *contrasted* to cognition in major social psychological models of persuasion (Chen & Chaiken, 1999; Petty & Cacioppo, 1986), judgment, or impression formation (Brewer, Srull, & Wyer, 1988; Fiske & Neuberg, 1990; Kruglanski & Webster, 1996), wherein these two construct categories were assigned distinct psychological functions. For instance, in various models of persuasion, the degree of motivational involvement in an issue determined whether the processing will be 'peripheral/heuristic' or 'central/systematic' (Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986). Similarly, various models of impression formation (e.g., Brewer, 1988; Fiske & Neuberg, 1990) incorporated motivational and cognitive considerations in assuming that low motivational involvement

will prompt impressions based on targets' social categories, whereas high involvement prompts the consideration of relevant individuating information about the targets. In the lay epistemic theory (Kruglanski, 1989, 2004; Kruglanski & Webster, 1996), a high degree of the motivation for closure was assumed to curtail the process of hypothesis testing and prompt individuals to 'seize and freeze' on early, judgment affording information, etc.

Beyond its separation from cognition, motivation has been often treated *statically* in social psychology research. Specifically, individuals were classified as if in a fixed motivational state with identifiable properties. Differences in the specific content of that state were expected to affect a person's behavior (Gollwitzer & Moskowitz, 1996). Thus, individuals were considered to have either a high or a low need for closure (Kruglanski & Webster, 1996; Webster & Kruglanski, 1998), a high or a low need for cognition (Cacioppo & Petty, 1982), 'learning' or 'performance' goals (Dweck & Elliot, 1983; Dweck & Leggett, 1988; Elliot & Dweck, 1988), approach or avoidance goals (Elliot, 1997, 1999; Elliot & Friedman, 2007), goals with a positive vs. negative outcome focus (Higgins, Roney, Crowe, & Hymes, 1994), 'intrinsic' (autonomy, competence) vs. 'extrinsic' (money) goals (Deci & Ryan, 1991), or 'high-level' (abstract) goal vs. 'low-level' concrete goals (Emmons, 1991, 1996). These different types of goals were assumed to systematically impact various relevant phenomena including information processing, performance, creativity, and overall well-being and satisfaction (Gollwitzer & Moskowitz, 1996).

Having set a goal is just the first step toward goal attainment. Goal pursuit includes a manifold set of activities. Initiating goal-directed actions and bringing them successfully to their conclusions requires one to seize the opportunities to act (i.e., to find appropriate means), ward off distractions, bypass barriers, compensate for failures and shortcomings, and negotiate conflicts. Although the dynamic nature of motivation has been addressed in the past (Atkinson & Birch, 1970; Lewin, 1935), it was mainly theoretical with limited empirical support of the specific conditions for the appearance and disappearance of the motivational state.

I. 1. The New 'Goal psychology'

Recently, social psychologists realized that new insights into such motivational *dynamism* and *flux* as persons *move* through their various environments may be gained if we abandon the separateness assumption of the 'motivation' versus 'cognition' program. Thus, whereas most prior treatments stressed the distinctiveness of motivational and cognitive variables a recent approach highlights their commonalities.

This approach assumes that motivational constructs such as 'goals' and 'means' are represented cognitively, and hence are subject to the general principles that govern all cognition. Specifically, motivational constructs are inferred from relevant evidence (it should be possible to 'prove' to a person

that X is a worthy goal to have), they are stored in memory, and are automatically activated by priming. Once goals have been automatically activated, they are automatically pursued. According to this approach, in their role as cognitive constructs, goals are cognitively associated with other relevant constructs such as their corresponding means of attainment. Hence, the activation of goals may spread to their corresponding behavioral plans (Aarts & Dijksterhuis, 2000; Aarts, Dijksterhuis, & De Vries, 2001; Bargh, 1990; Ferguson & Bargh, 2004; Kruglanski et al., 2002) stirring individuals to action. Furthermore, as with other cognitive constructs, goals too are constrained by limited attentional resources, such that the activation of a given goal may pull resources away from alternative goals (for reviews, see Fishbach & Ferguson, 2007; Kruglanski & Köpetz, 2009, forthcoming).

Beyond the commonality they share with other cognitive constructs, goals constitute a special category. Unlike alternative cognitive concepts like 'tables', 'doctors' or 'butterflies', 'goals' have a unique meaning: they are thought to represent states of affairs attainable through action serving as means to goal attainment (Kruglanski, 1996; Kruglanski et al., 2002). In other words, their mental representations contain considerations of goal value and its expectancy of attainment which define subjective utility (Atkinson, 1964). Subjective utility determines a series of unique motivational properties such as goal desirability/magnitude (goal commitment) or the degree to which the individual is determined to pursue specific objectives which, in turn, may express themselves in the persistence of efforts toward goal attainment including the choice of appropriate means and the management of goal conflicts.

As possible future states, goals may also vary in their relation to current states. *Approach goals* represent future states that are more desirable than the current states, hence warranting actions designed to bring them about. In contrast, *avoidance goals* refer to impending future states that are less desirable than the current states, hence warranting actions designed to forestall them.

Motivational constructs differ from other cognitive constructs not only in terms of their content, but also in terms of the connections among them which have a certain *direction* and serve specific *functions*. As a consequence, activation of a specific goal not only leads to the automatic activation of its means of attainment, but it also transfers motivational properties such as affect, commitment, etc. (Ferguson & Bargh, 2004; Fishbach, Shah, & Kruglanski, 2004). Such properties are related to the value of the goal and have different behavioral consequences for goal pursuit. Furthermore, the motivational properties of an active goal (e.g., commitment) have important implications for its associations with other goals. For instance, activation of a high commitment goal may result in the inhibition of alternative goals in order to maximize goal attainment.

Indeed, the 'New Goal psychology' has addressed classic motivational phenomena harking back to concerns of theorists like Kurt Lewin and Fritz Heider (e.g., about problems of substitution, goal persistence, or the resumption

of interrupted activities) (for reviews, see, e.g., Bargh et al., forthcoming; Kruglanski & Köpzet, 2009, forthcoming).

Although the new goal psychology has offered many insights into self-regulation phenomena, the research carried out in this paradigm, like much social psychological research in general (see Kruglanski & Higgins, 2004; Loewenstein, Read, & Baumeister, 2003, for a discussion) has tended to be phenomena and data driven rather than theory driven. For instance, much of the new goal research explored the properties of goals by demonstrating that various cognitive processes (in particular, knowledge activation, spreading activation, and unconscious activity) apply also to goal related phenomena. Typically, the *explicit* focus of that work was on implementing a given cognitive manipulation such as supraliminal or subliminal priming and looking at its effects on various relevant outcomes, such as action, performance (e.g., Aarts & Dijksterhuis, 2000; Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Chartrand & Bargh, 1996), or positive or negative affect engendered by goal progress or lack of progress respectively (Ferguson & Bargh, 2004; Fishbach et al., 2004), etc. This relatively narrow focus afforded a deeper understating of basic goal functioning, yet it stopped short of applying goal-related phenomena more broadly, for instance to other psychological topics such as judgment or choice.

1. 2. Goal systems theory

Goal systems theory (Kruglanski et al., 2002) is cast in the cognitive approach to motivation and it aims at a broad application of goal constructs to a variety of *goal-directed behaviors*. A unique feature of the theory is that it treats goals *systemically*, in relation to their means of attainment and other goals that may be activated in course of the individual's engagement in a given goal pursuit. A possible goal system is depicted in Figure 1.

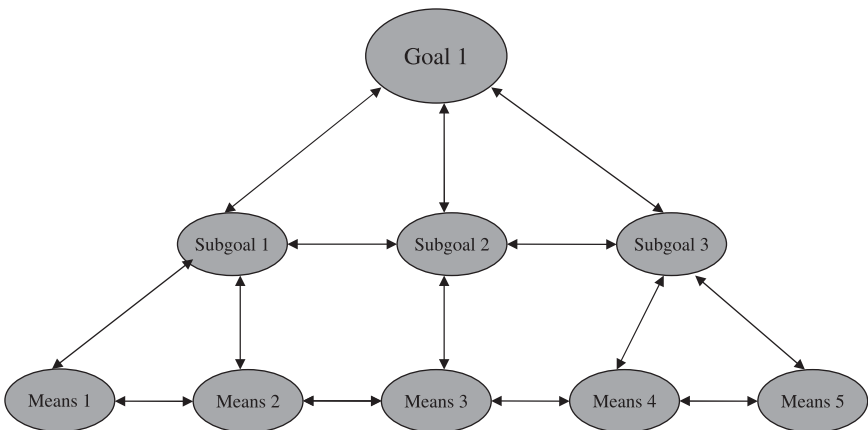


Figure 1 A system of goals and means (Reproduced after Kruglanski et al., 2002).

Motivational phenomena such as goal commitment, means choice, management of goal conflict are approached as a joint function of cognitive principles (that the goal systems share with other cognitive structures) as they apply to *unique motivational concepts* such as goals and means.

The theory recognizes that human action is goal driven, in that it represents the striving to attain specific desirable objectives (or to avoid undesirable objectives) as a function of goal value and expectancy of attainment. Whereas goal pursuit has its own endogenous determinants related to considerations of expectancy and value, it is also determined by the exogenous cognitive conditions of a given goal system which affect the nature and values of these endogenous factors. Such cognitive factors are structural and allocational. Thus, (1) goals like other mental representations are associatively linked to other constructs, such as their means of attainment, and other goals; (2) such associative links can be facilitative or inhibitory; (3) goal pursuit is resource dependent: the greater the investment of resources in the pursuit of a certain goal, the less resources would be available for alternative goals or means. For instance, a given goal may be associated with a large or a small number of means each providing a separate path to its attainment. This defines a configuration of *equifinality* (Kruglanski et al., 2002). Similarly, a given means may be connected to a large or a small number of goals that it may promise to attain. This defines the configuration of *multifinality* (Kruglanski et al., 2002).

The allocational aspect of goal systems' theory refers to the assumption that goal pursuit is constrained by limited cognitive resources; the more extensive the resource investment in a given goal, the less the residual resources available for alternative goals. For instance, if one's cognitive resources are committed to the goal of eating (e.g., in a high state of hunger) one might 'forget' (i.e., momentarily suppress or inhibit) one's determination to diet. One's heightened concern for security might diminish one's concern with frugality, and one might spend lavishly on a home security system momentarily suppressing one's determination to keep one's investment portfolio growing.

Thus, by identifying the general features of goal-directed action, goal systems theory affords insights into the dynamic nature of human motivational concerns as individuals move through their complex and changing environments. It attempts to offer a general psychological theory of human action across specific persons and situations. In the following pages, we explore the implications of goal systems theory for the problem of choice and judgment.

II. Goal Systems Theory in Choice Contexts

Everyday life abounds with choices. We choose among brands of food at the grocery store, menu items at the restaurant, the airlines for our trips, types of entertainment for our night out, the college we attend, and careers we embark on. The interesting question, of course, is not *what*, but *how* are

our choices made. These questions are fundamental and hardly new. They have been extensively addressed by many disciplines, from mathematics, and statistics, through the various social sciences including economics, political science, sociology and psychology. A major impact on understanding choice has been exerted by rational choice theory (pioneered by von Neumann & Morgenstern, 1944). According to this viewpoint, individuals' choices are conscious and deliberate. They reflect individuals' preferences (Kahneman & Tversky, 1984) and the subjective likelihood that they will be attained. Despite its popularity, the rational choice model has been challenged by an increasing amount of empirical research (Kahneman & Tversky, 1979, 1984; Tversky & Kahneman, 1981). Not only are people often unaware of *what they want* (Nisbett & Wilson, 1977), but they might occasionally make better choices when they do it unconsciously versus consciously (Dijksterhuis, 2004; Dijksterhuis, Bos, Nordgren, & van Baaren, 2006). Moreover, people often appear to be inconsistent in their preferences, even when they exercise their choices among similar options and under similar circumstances. As March (1978) put it, 'tastes are not necessarily absolute, relevant, stable, consistent, and precise' (pp. 595–569). In fact, as March points out, occasionally behavior does not make sense even to the person who performed it. One might assume that this may be restricted to cases when the choices are trivial, or unimportant. However, recent research disconfirms this expectation. In a speed-dating experiment conducted with students at Columbia University, Fisman, Iyengar, and Simonson (2004) showed that people's ratings of their ideal partner in terms of ambition, attractiveness, fun loving, intelligence, shared interests, and sincerity did not predict the choice of a date during a 4-minute speed dating with 9–21 possible dates. Despite their self-reported preferences, participants' choice of a date varied greatly with their gender and supported the stereotypical beliefs' about physical attractiveness and intelligence. Women's choices reflected a preference for intelligence and ambition, but also for physical attractiveness, whereas males' decisions were primarily predicted by physical attractiveness. Participants' choices were also significantly affected by contextual variations such as the number of possible dates and the order in which the dates were met. Women, for example, tended to become more selective as the number of possible dates increased.

II. 1. *The multifinality principle in choice without awareness*

One may well wonder what may account for such inconsistencies in preferences. Are they the exclusive result of our limited cognitive capacities as suggested by the cognitive miser approach (cf. Fiske & Taylor, 1991)? Work on motivated cognition (Dunning, 1999; Kruglanski, 1996; Kunda, 1990; Kunda & Sinclair, 1999) advanced the idea that motivation is partially responsible for biases in judgments and decisions. But how exactly does motivation impact our choice?

It may be possible to answer this question in terms of specific goal systems activated in a given choice situation. According to goal systems theory, people's choices reflect the dynamic relation between goals and their associated means of attainment *within* a particular goal system, as well as *between* different goal systems set in place in specific circumstances. Unlike the rational-choice approach which assumes that goal pursuit is conscious and deliberate, goal systems theory assumes that people's choices may be driven by two types of goals: those that they pursue consciously and deliberately, and those of which they may not be aware. These two goal types may combine to affect individual's choices in given situations (Chun & Kruglanski, 2005a; Simonson, 2005).

Consider the everyday example of grocery shopping. One may have the conscious goal of buying cereal. The goal can be gratified by buying sweetened or unsweetened cereal, cereal with bran, cereal with oat, or hot cereal. Assuming that these options are of equal quality and taste, they represent the *equifinality* configuration of the 'buying cereal' goal implying that the goal can be attained by any one of the singular options (representing means). However, on the way to the grocery store, the person might have just happened to glance at a dieting ad in the local paper. Once at the grocery store, he/she might head directly for the cereal aisle and without hesitation pick up the most 'healthful' cereals of the lot, a low calorie cereal, promising to be packed with vitamins. In goal systemic terms, the choice in this instance may have been facilitated by the multifinality configuration mentioned earlier. Specifically, the selected cereal may have satisfied not only the general 'buying cereal' goal but also the goal of 'health' primed unconsciously by the dieting ad. In other words, if in addition to the focal, conscious goal the individual might be pursuing other, unconscious, goals as well, and the choices he/she makes might often be those that promise to satisfy several goal-based constraints, thus delivering the greatest overall value in return for one's choice (Figure 2).

What makes multifinality-driven choice psychologically interesting is, first, the possibility that unconscious goals may affect choices even when

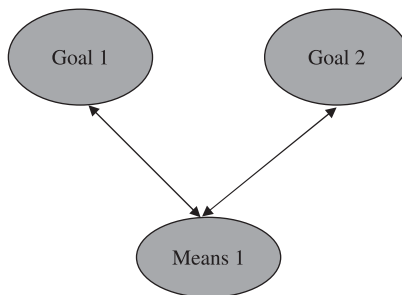


Figure 2 Multifinality configuration (Reproduced after Kruglanski et al., 2002).

individual's decisions are, avowedly, in the service of deliberately pursued goals. Second, because goals can be activated by shifting environmental stimuli (Bargh, 1990; Bargh et al., 2001; Ferguson & Bargh, 2004; Fishbach & Ferguson, 2007; Kruglanski & Köpzet, 2009, forthcoming, for reviews), this may affect an intriguing instability in choices deemed appropriate with regard to the very same goal as function of currently activated goal alternatives.

For instance, in Wilson and Nisbett's (1978) classic research wherein a passers-by at a department store chose among four different nightgowns of similar quality, or among four identical pairs of nylon stockings. A strong *position effect* was found such that the two rightmost objects in the array were heavily overchosen. Yet, participants seemed entirely unaware of their bias. Instead, they justified their choices exclusively in terms of the quality of the choice objects (the nightgowns or the stockings). Chun, Kruglanski, Sleeth-Kepler, and Friedman (2005b) hypothesized that the choice of the rightmost object was multifinal, satisfying not only the *focal goal* (that of choosing the best quality items) which would have been gratified equally well by any object in the array, but also a *background goal* of reaching quick closure after inspecting the entire array from left to right (the way we read!).

To explore this possibility, Chun et al. (2005b) conceptually replicated Wilson and Nisbett's (1978) research with one modification. Participants' 'focal goal' was kept constant while manipulating the presumptive 'background goal' of closure. Participants were given the (focal) goal of choosing the pair that was of the best quality among four pairs of (actually) identical athletic socks. To manipulate the 'background goal' of closure, participants in one condition were placed under time pressure (Kruglanski, 2004; Kruglanski, Pierro, Mannetti, & De Grada, 2006; Kruglanski & Webster, 1996; Webster & Kruglanski, 1998). In another condition, participants were not placed under time pressure and they were given accuracy instructions intended to reduce their need for closure (Kruglanski & Webster, 1996). According to the multifinality analysis, the rightward bias should be replicated in the time-pressure condition and reduced in the accuracy condition. That is precisely what happened. Specifically, 81% of participants in the *time-pressure* (need for closure) condition chose the two rightmost choices strongly replicating Wilson and Nisbett (1978). By contrast, only 33% of participants in the *accuracy* condition made the rightmost choices (Figure 3).

The reasons participants gave for their choices suggested that they were completely unaware of the fact that variations in time-pressure, accuracy instructions or the sock position in the array had any effect on their choice. Invariably, their explanations were phrased in terms of their conscious goal depicting the chosen sock's apparent superior quality (e.g., 'Stitching looked the best, most stitches per inch and there were no obvious blemishes', etc.).

The research described above shows how *momentarily* introduced alternative goals may unconsciously drive people's choice of means with regard to the focal goal. In addition people may hold chronic goals such as high

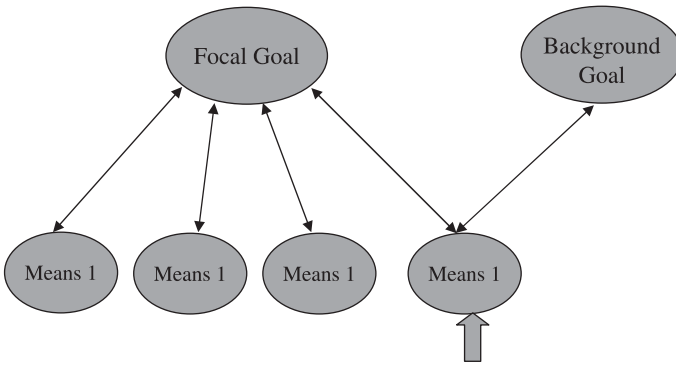


Figure 3 Multifinality-based choice.

need for cognitive closure. Persons who are high on the need for closure should exhibit a particularly pronounced preference for multifinal choices which eliminate the unnerving ambiguity of having one's alternative goal pursuits suspended while pursuing a current focal goal. Chun et al. (2005a) obtained consistent support for this hypothesis in a series of studies. Participants who were high (vs. low) on need for closure reported that they (1) expected to attain more goals through the use of computers, (2) exhibited a stronger preference for a multifinal over a unifinal camera even though the unifinal one was of a higher quality, (3) exhibited a stronger preference for a multifinal over a unifinal cell phone even though the multifinal one was much more expensive, and (4) reported greater use of a multifinal soap (for both the face and the body) versus use of two separate soaps, one for the face, the other for the body. These findings were echoed by the results of David Sleeth-Kepler (2005) that (5) high versus low need for closure individuals prefer multifinal friends (e.g. 'friends for all seasons' that gratify multiple needs) over unifinal friends relevant to one type of need only (e.g. tennis friends, intellectual friends, emotionally supportive friends, etc.).

II. 2. Consequences of multifinal choices

As just depicted, multifinal choices make a great deal of sense, and exemplify the simple rationality of maximizing the returns on one's investments, or increasing the 'bang for one's buck'. But like anything else in life, multifinal means 'come with a price tag', and can entail significant tradeoffs in comparison with unifinal means. These tradeoffs are related to the *number* and *instrumentality* of the means one might end up as consequence of the effort to attain multifinality.

Restriction of the means set-size. Multifinality consideration should narrow the set of means to a focal goal by inducing a preference to means assumed to be instrumental to the pursuit of alternative as well as focal objectives.

Such multifinal means are likely to constitute a subset of the total number of means to the focal goal that one could envisage. Restricting one's attention to those particular means should thus reduce the number of means to the focal goal that one would find acceptable.

In one study designed to test this effect, Kőpetz, Fishbach, and Kruglanski (2007, Study 1) activated participants' alternative goals by asking them in one condition to list three activities they had planned for the rest of that day (the uncompleted goals condition). In another condition, participants listed three activities that they had already accomplished that day (the completed goals condition). Presumably, the latter goals would have lost their driving potential, and hence their constraining effect on means to a focal goal. Participants were then asked to choose from a list of 20 foods the ones they desired for lunch. These foods were pre-tested such that 10 of them were generally readily available at the food court where we ran the study (e.g., Chinese food, tacos, fries), whereas the remaining 10 were foods unavailable at the food court, though available at other campus locations (e.g., salmon, macaroni and cheese, crab cakes). The 'easy to get' foods were assumed to be multifinal in that choosing them will help participants to fulfill their focal goal (of having lunch) while also saving time for alternative goals that they had planned for the day. That is in fact what happened. Specifically, in the uncompleted goals condition, participants chose fewer foods as desirable. Those also tended to be the 'easy to get' foods that would have allowed participants to have more time for their alternative pursuits. Consistent with Chun et al. (2005) studies, the reasons participants provided for their food choice did not reflect any awareness of the impact that background goals might have had on their choice (e.g. 'I like fish'; 'Fruits are good'; 'Pasta fulfills me', etc.).

Dilution effects. In addition to its effect on the number of choices (means) considered with respect to a focal goal, multifinality consideration may also impact the *instrumentality* of such choices. This effect, known as the *dilution effect*, was recently explored in a series of studies by Zhang, Fishbach, and Kruglanski (2007). Consistent with Anderson's (1974) 'fan effect', whereby the strength of the association between a construct and a cue is inversely proportionate to the number of cues associated with the construct, Zhang et al. assumed that strength of the linkage between a means and a goal will be inversely proportionate to the number of goals associated with the means. They hypothesized further that the diluted association strength would be interpreted as lowered instrumentality and hence, reduce the tendency to choose the multifinal means when only one of the goals served by that means was activated. For instance, in one of the studies (Zhang et al., 2007, Study 6) participants filled out a survey allegedly assessing 'study habits' using a laser pointer pen. Half of the participants (in the one-goal condition) completed the survey only using the pen. The other half (in the two-goal condition) completed the same survey and were asked, at the end of the

survey, to additionally evaluate the laser function of the pen as well. Thus, participants in the later condition practiced both functions of the pen, as a writing instrument as well as a laser pointer. Participants were then asked to write down their personal information in order to receive the compensation for their participation in the study. Two pens were left on the desk for them to use; a regular pen, and the laser pointer pen. In the present terms, participants' choice was between a unifinal and a multifinal means to complete their 'writing' goal. The results showed that among participants who were not asked to evaluate the laser function of the pen (the one-goal condition), 54% chose the laser pen to write down their personal information, whereas only 16% of those who evaluated the laser option of the pen (two-goal condition) chose this particular pen. In other words, exposure to the laser pointer function seems to have diluted the associative strength between the laser pointer pen and the goal of writing and hence lowered the probability of choosing the laser pointer pen when 'writing' was the sole goal.

II. 3. Boundary conditions of the multifinal choice. When the end justifies the means

Multifinality-based choices may be subject to important boundary conditions. One of these relates to individual's degree of commitment to the focal goal, defined as the degree of determination or willingness to pursue that specific goal. Goal pursuit follows the principle of resource-dependency whereby the greater the investment of resources in the pursuit of a certain goal, the less resources would be available for alternative goals. In this vein, Shah and Kruglanski (2002) found that increased commitment to a focal goal may inhibit alternate goals. Such inhibition should liberate one's choice from constraints of the alternative goals, hence removing the necessity to search for multifinal means, and allowing a full suite of means to the focal goal to be judged as acceptable. In one study, Köpetz et al. (2007, Study 3) found empirical support for this argument. Specifically, they manipulated participants' commitment to the focal goal of 'eating' by priming them during mid-day hours with eating-related words ('lunch', 'food', 'eat') or neutral words. The background goal, common to all participants was 'keeping a healthy diet'. Participants made hungrier through the priming manipulation chose a greater variety of foods (as means to the focal goal of 'eating'), and a lesser proportion of healthy, hence multifinal foods (healthy foods). Participants in the hungrier condition also showed slower reaction times to diet-related words indicating inhibition of the 'healthy diet' goal. It was finally found that participants' reaction times mediated the relationship between focal goal commitment (degree of hunger) and choice of uniquely 'healthy' foods.

The above results suggest that there may be psychological conditions in which *the end* does justify the *means*, at least subjectively. When commitment to the goal is heightened, alternative concerns may be suppressed and the set of acceptable means may be liberated from constraints that such alternative concerns would have normally exercised.

In summary, we argued that people's choices are driven by mental representations of goals that are either chronically held or are activated by the situational context. Such goals can be conscious or explicit and implicit. When in addition to a focal, conscious goal, people pursue other, unconscious goals they may choose multifinal means affording the joint pursuit of their co-active goals. Multifinality-based choice may induce instability in people's choices and preferences. Specifically, the number and type of means deemed acceptable to the same focal goal may depend on additional goals that may be variously activated in different situations. Multifinal choices represent a trade-off. They appear to maximize value by increasing the (subjective) likelihood of attaining both the focal and the alternative goals. At the same time they reduce the attainment likelihood of the focal goal due to decrease in the number and the instrumentality of means perceived as acceptable to that goal.

III. Goal System theory and judgment

III. 1. Motivated biases in judgment

Besides choice, the judgment of persons, objects and events is another ubiquitous feature of people's everyday affairs. From the moment we open our eyes, if not before, we continually pass judgments on a variety of issues. The quintessential goal of any judgment is accuracy (cf. Chaiken et al., 1989; Petty & Cacioppo, 1986). But as in the case of choice, judgments (focal goal) are often constrained by additional 'goals' that may be active in the background, for instance, reaching cognitive closure (Kruglanski, 2004; Kruglanski & Webster, 1996; Kruglanski et al., 2006), impression management (Chaiken, Liberman, & Eagly, 1989), ego enhancement (Kunda, 1990), and so on. Extensive research has shown that in such instances, unbeknownst to themselves, people may 'sacrifice' the accuracy of their judgments in the service of such additional goals. In the psychological literature, this phenomenon has been variously referred to as *motivated reasoning*, *wishful thinking*, or *defensive processing* and has been widely supported by empirical evidence. For instance, individuals informed that coffee drinking is unhealthy (or healthy) may appropriately distort their recollection of coffee drinking instances (Kunda & Sanitioso, 1989) so as to reach a desirable conclusion (see also Dunning, 1999; Kruglanski, 1999; Kunda & Sinclair, 1999). People's perception of slants of hills and of distances is affected by whether the perceiver is wearing a heavy backpack (Proffitt, Stefanucci, Banton, & Epstein, 2003), whether she or he is old or young (Bhalla & Proffitt, 1999), whether she or he is fatigued (Proffitt, Bhalla, Gossweiler, & Midgett, 1995), or contemplates action goals (Witt, Proffitt, & Epstein, 2004). People's perception of ambiguous stimuli is affected by the outcomes contingent on their interpretation (Balcetis & Dunning, 2006; Hsee, 1996).

Whereas some investigators questioned the very existence of motivational biases in the days of the separatist approach mentioned earlier, their presence is not questionable anymore. Nonetheless, the mechanisms underlying such impact are not clearly understood as yet. One interesting possibility suggested by the goal systems theory is that distorted judgments are the result of a multifinality quest whereby the type of evidence (information) one may consider as serving the accuracy goal (focal goal) may be constrained by biasing background goals. Specifically, motivated biases in judgment may represent the case wherein perceived 'instrumentality' of a judgment to the goal of accuracy (perception of it being accurate) is increased as function of its consistency with the biasing background goal.

These notions were explored in several studies in our lab. In one experiment, Chen, Orehek, and Kruglanski (2008) told participants that the ACC is testing procedures for granting an award to one university each year for overall track and field achievements. They were then presented with the track and field records of the University of Maryland and Duke University teams. Participants' focal goal was to judge the merits of Maryland or Duke for receiving the award. A background goal was introduced by priming participants with either words relating to the University of Maryland, intended to activate the goal of identification with the university, or accuracy related words intended to augment the goal of being accurate. Implied by our multifinality analysis, the judgment about the deservingness of each university for the award was significantly more distorted toward Maryland when the goal of identification with University of Maryland was activated than when the goal of accuracy was activated.

Chen et al. (2008) also manipulated participants' residual resources for distortion by presenting the judgmentally relevant information in a difficult vs. easy to read format. It was assumed that the difficulty to read format would deplete participants' resources, hence reduce their ability to carry out a motivated distortion. As predicted, the bias toward Maryland observed disappeared when the information processing task was difficult (vs. easy) to process, and hence was resource depleting. In a second study using a similar paradigm, participants' resources were depleted by a prior difficult (vs. easy) Stoop task, and in a third study, individuals' working memory capacity was measured. Again, as predicted, participants whose resources were depleted and/or ones whose working memory capacity was limited were less biased in favor of Maryland than their counterparts.

III. 2. Persuasion

In a typical persuasion situation, an individual is expected to endorse or reject the position advocated based on the evidence presented. Such evidence may be included in the *message arguments*, or in *peripheral cues*, for instance containing information about the attractiveness or credibility of the source. Consider a position advocating for banning soda machines from college

campuses. In order to determine one's agreement or disagreement with such a position, one may consider information referring to scientific evidence about the health-related impact of drinking soda, or may use peripheral cues related to credibility and attractiveness of the source who has advocated the position. In other words, confronted with an *attitude-formation goal*, and provided with different means or pieces of evidence to attain that goal, one needs to consider the most relevant means and apply it in order to reach a conclusion and form an attitude. But how does one decide which piece of evidence is the most relevant? Persuasion studies have often found that peripheral or heuristic cues exert their persuasive effects under conditions of low processing motivation or cognitive capacity, whereas message argument information does so under high motivation and capacity (see, e.g., Maheswaran & Chaiken, 1991; Petty, Cacioppo, & Goldman, 1981). Granting that in typical persuasion research, the cues are generally perceived as less judgmentally relevant than the message arguments (Pierro, Mannetti, Kruglanski, & Sleeth-Keppler, 2004), the question remains why, nonetheless, they are capable of exerting the greater persuasive impact under low processing motivation and capacity conditions.

One possibility is that under low processing motivation and capacity, in addition to their attitude-formation focal goal, participants were also motivated by a *background goal*, that of *attaining quick cognitive closure*. In such a case, peripheral cues which in most persuasion research were typically brief, simple, and presented upfront, may have been 'judged' as multifinal, in that they allowed participants to both form an attitude (hence satisfying their focal goal) and to do so quickly (thus satisfying the background goal of closure). By contrast, in most persuasion research, message arguments were typically lengthier, more complex and placed later in the informational sequence. These features may have imposed higher processing demands than the processing of 'cues'. In the presence of sufficient cognitive capacity and motivation, the accuracy goal may have overridden that of closure. Because the message arguments were typically perceived as more relevant (hence more instrumental to the goal of accuracy) than the cues, they were therefore relied on to a greater extent than the cues.

In support of this analysis, Pierro et al. (2004) found that the need for closure was related to the use of 'peripheral' cues in a persuasion context. One could also manipulate the perceived instrumentality of the cues and the message argument to the goal of accuracy and of closure and examine the effect this would have on their persuasive impact. These possibilities could be probed in subsequent research.

To conclude, forming a judgment is a goal-driven activity. Though accuracy and veracity are the quintessential goals of judgments, alternative goals (the biasing goals referred to earlier) may affect the participants' accuracy of judgments in ways that would serve these alternative goals as well. In other words, people's judgments in such situations appear to aim at satisfying two objectives: render a judgment that appears accurate but is also

'satisfactory' with regard to the background goal. Although such judgments may reflect a systematic bias, they also reflect a 'rational' *multifinality quest* designed to leave none of one's motivational concerns unattended.

Summary

In the present paper, we outlined a novel approach to motivation and self regulation couched from the perspective of goal systems theory (Kruglanski et al., 2002). Goal systems theory adopts a cognitive view of motivation and highlights the interrelations of goals and means. The cognitive aspects of the theory have to do with the architecture of cognitions, and the limited pool of cognitive resources. The motivational aspects of the theory refer to the relation of goal/means constructs to the dynamics of action and the affective phenomena that accompany goal pursuit. We have shown how goal systemic analyses offer new insights into the classic social psychological problems of choice and judgment.

Endnote

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References

- Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology*, **78**(1), 53–63.
- Aarts, H., Dijksterhuis, A., & De Vries, P. (2001). On the psychology of drinking: Being thirsty and perceptually ready. *British Journal of Psychology*, **92**(4), 631–631.
- Anderson, J. R. (1974). Retrieval of propositional information from long-term memory. *Cognitive Psychology*, **6**(4), 451–474.
- Atkinson, J. (1964). *An Introduction to Motivation*. Oxford, England: Van Nostrand.
- Atkinson, J. W., & Brehm, D. (1970). *The Dynamics of Action*. New York, NY: Wiley.
- Balceris, E., & Dunning, D. (2006). See What You Want to See: Motivational Influences on Visual Perception. *Journal of Personality and Social Psychology*, **91**(4), 612–625.
- Bargh, J. A. (1990). Auto-motives: Preconscious determinants of social interaction. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of Motivation and Cognition: Foundations of Social Behavior* (Vol. 2, pp. 93–130). New York, NY: Guilford Press.
- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology*, **81**(6), 1014–1027.
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 6, pp. 1–62). New York, NY: Academic Press.
- Bhalla, M., & Proffitt, D. R. (1999). Visual-motor recalibration in geographical slant perception. *Journal of Experimental Psychology: Human Perception and Performance*, **25**(4), 1076–1096.
- Brewer, M. B. (1988). A dual process model of impression formation. In T. K. Srull & R. S. Wyer Jr. (Eds.), *A Dual Process Model of Impression Formation* (pp. 1–36). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, **42**, 116–132.
- Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended Thought* (pp. 212–252). New York, NY: Guilford Press.

- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology*, *71*(3), 464–478.
- Chen, S., & Chaiken, S. (1999). The heuristic-systematic model in its broader context. In S. Chaiken & Y. Trope (Eds.), *Dual-process Theories in Social Psychology* (pp. 72–96). New York, NY: Guilford.
- Chen, X., Orehek, E., & Kruglanski, A. W. (2008). *Motivated Distortion as Perceived Means Instrumentality*. Unpublished manuscript, University of Maryland, College Park.
- Chun, W. Y., & Kruglanski, A. W. (2005a). Consumption as a Multiple-Goal Pursuit Without Awareness. In F. R. Kardes, P. M. Herr, & J. Nantel (Eds.), *Applying Social Cognition to Consumer-focused Strategy* (pp. 201–217). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Chun, W., Kruglanski, A. W., Sleeth-Keppler, D., & Friedman, R. (2005b). *On the Psychology of Quasi-Rational Decisions: The Multifinality Principle in Choice Without Awareness*. Manuscript submitted for publication.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska Symposium on Motivation* (Vol. 38, pp. 237–288). Lincoln, NE: University of Nebraska Press.
- Dijksterhuis, A. (2004). Think different: The merits of unconscious thought in preference development and decision making. *Journal of Personality and Social Psychology*, *87*(5), 586–598.
- Dijksterhuis, A., Bos, M. W., Nordgren, L. E., & van Baaren, R. B. (2006). On Making the Right Choice: The Deliberation-Without-Attention Effect. *Science*, *311*(5763), 1005–1007.
- Dunning, D. (1999). A newer look: Motivated social cognition and the schematic representation of social concepts. *Psychological Inquiry*, *10*(1), 1–11.
- Dweck, C. S., & Elliot, E. S. (1983). Achievement motivation. In P. H. Mussen & E. M. Hetherington (Eds.), *Handbook of Child Psychology: Vol. IV. Social and Personality Development* (pp. 643–691). New York, NY: Wiley.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256–273.
- Elliot, A. J. (1997). Integrating the ‘classic’ and ‘contemporary’ approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. Maehr & P. Pintrich (Eds.), *Advances in Motivation and Achievement* (Vol. 10, pp. 143–179). Greenwich, CT: JAI.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189.
- Elliot, A. J., & Friedman, R. (2007). Approach-avoidance: A central characteristic of personal goal. In B. R. Little, K. Salmela-Aro, & S. D. Phillips (Eds.), *Personal Project Pursuit: Goals, Actions, and Human Flourishing* (pp. 97–118). Mahwah, NJ: LEA.
- Elliot, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5–12.
- Emmons, R. A. (1991). Personal strivings, daily life events and psychological and physical well-being. *Journal of Personality*, *59*, 453–472.
- Emmons, R. A. (1996). Striving and feeling: Personal goals and subjective well-being. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The Psychology of Action* (pp. 313–337). New York, NY: Guilford.
- Ferguson, M. J., & Bargh, J. A. (2004). Liking Is for Doing: The Effects of Goal Pursuit on Automatic Evaluation. *Journal of Personality and Social Psychology*, *87*(5), 557–572.
- Fishbach, A., & Ferguson, M. J. (2007). The goal construct in social psychology. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social Psychology: Handbook of Basic Principles* (2nd edn) (pp. 490–515). New York, NY: Guilford Press.
- Fishbach, A., Shah, J. Y., & Kruglanski, A. W. (2004). Emotional transfer in goal systems. *Journal of Experimental Social Psychology*, *40*(6), 723–738.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum model of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 23, pp. 1–74). New York, NY: Academic Press.

- Fiske, S. T., & Taylor, S. E. (1991). *Social Cognition* (2nd edn). New York, NY, England: Mcgraw-Hill Book Company.
- Fisman, R., & Iyengar, S., & Simonson, I. (2004). Revealed preference determinants of mate selection: Evidence from an experimental dating market. Manuscript under review.
- Gollwitzer, P. M., & Moskowitz, G. B. (1996). Goal effects on action and cognition. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social Psychology: Handbook of Basic Principles* (pp. 361–399). New York, NY: Guilford.
- Higgins, E. T., Roney, C. J. R., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology*, **66**, 276–286.
- Hsee, C. K. (1996). Elastic justification: How unjustifiable factors influence judgments. *Organizational Behavior and Human Decision Processes*, **66**(1), 122–129.
- Kahneman, D., & Tversky, A. (1979). On the interpretation of intuitive probability: A reply to Jonathan Cohen. *Cognition*, **7**(4), 409–411.
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, **39**(4), 341–350.
- Kelley, H. H. (1987). Causal schemata and attribution process. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, & S. Valins (Eds.), *Attribution: Perceiving the Causes of Behavior* (pp. 151–174). Hillsdale, NJ: LEA.
- Köpetz, C. E., Fishbach, A., & Kruglanski, A. W. (2007). *Having One's Cake and Eating It Too: The Quest for Multifinal Means in Goal Pursuit*. Manuscript under review.
- Kruglanski, A. W. (1989). *Lay Epistemics and Human Knowledge: Cognitive and Motivational Bases*. New York, NY: Plenum Press.
- Kruglanski, A. W. (1996). Goals as knowledge structures. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The Psychology of Action: Linking Cognition and Motivation to Behavior* (pp. 599–618). New York, NY: Guilford Press.
- Kruglanski, A. W. (1999). Motivation, cognition, and reality: Three memos for the next generation of research. *Psychology Inquiry*, **10**(1), 54–59.
- Kruglanski, A. W. (2004). *The Psychology of Closed Mindedness*. New York, NY: Psychology Press.
- Kruglanski, A. W., & Higgins, E. T. (2004). Theory Construction in Social Personality Psychology: Personal Experiences and Lessons Learned. *Personality and Social Psychology Review*, **8**(2), 96–97.
- Kruglanski, A. W., & Köpetz, C. E. (2009). The role of goal-systems in self-regulation. In E. Morsella, J. Bargh, & P. Gollwitzer (Eds.), *The Psychology of Action: Vol. 2: The Mechanisms of Human Action* (pp. 350–367). New York, NY: Oxford University Press.
- Kruglanski, A. W., & Köpetz, C. E. (forthcoming). What is so Special (and Non-Special) about Goals? A View from the Cognitive Perspective. In G. Moscovitz & H. Grant (Eds.), *Goals*. New York, NY: Guilford Press.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: 'Seizing' and 'freezing'. *Psychological Review*, **103**(2), 263–283.
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 34, pp. 331–378). San Diego, CA: Academic Press.
- Kruglanski, A. W., Chun, W. Y., Erb, H. P., Pierro, A., Mannetti, L., Spiegel, S., et al. (2003). A parametric unimodel of human judgment: Integrating dual-process frameworks in social cognition from a single-mode perspective. In J. P. Forgas, K. D. Williams, & W. von Hippel (Eds.), *Social Judgments: Implicit and Explicit Processes* (pp. 137–161). New York, NY: Cambridge University Press.
- Kruglanski, A. W., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as Epistemic Providers: Need for Closure and the Unfolding of Group-Centrism. *Psychological Review*, **113**(1), 84–100.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, **108**(3), 480–498.
- Kunda, Z., & Sanitioso, R. (1989). Motivated changes in the self-concept. *Journal of Experimental Social Psychology*, **25**(3), 272–285.
- Kunda, Z., & Sinclair, L. (1999). Motivated reasoning with stereotypes: Activation, application, and inhibition. *Psychological Inquiry*, **10**(1), 12–22.

- Lewin, K. (1935). *A Dynamic Theory of Personality: Selected Papers*. In D. E. Adams & K. E. Zener, Trans. New York, NY: McGraw Hill.
- Loewenstein, G., Read, D., & Baumeister, R. (2003). *Time and Decision: Economic and Psychological Perspectives on Intertemporal Choice*. New York, NY: Russell Sage Foundation.
- Maheswaran, D., & Chaiken, S. (1991). Promoting systematic processing in low-motivation settings: Effect of incongruent information on processing and judgment. *Journal of Personality and Social Psychology*, **61**(1), 13–25.
- March, J. G. (1978). Bounded rationality, ambiguity and the engineering of choice. *Bell Journal of Economics*, **9**, 586–608.
- Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality. Fact or fiction? *Psychological Bulletin*, **82**(2), 213–225.
- Morsella, E., Bargh, J., & Gollwitzer, P. (2009). *The Psychology of Action: Vol. 2: The Mechanisms of Human Action*. New York, NY: Oxford University Press.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, **87**, 231–259.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 19, pp. 1123–205). New York, NY: Academic Press.
- Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology*, **87**(5), 847–855.
- Pierro, A., Mannetti, L., Kruglanski, A. W., & Sleeth-Keppler, D. (2004). Relevance Override: On the Reduced Impact of 'Cues' Under High-Motivation Conditions of Persuasion Studies. *Journal of Personality and Social Psychology*, **86**(2), 251–264.
- Proffitt, D. R., Bhalla, M., Gossweiler, R., & Midgett, J. (1995). Perceiving geographical slant. *Psychonomic Bulletin & Review*, **2**(4), 409–428.
- Proffitt, D. R., Stefanucci, J., Banton, T., & Epstein, W. (2003). The role of effort in perceiving distance. *Psychological Science*, **14**(2), 106–112.
- Shah, J. Y., & Kruglanski, A. W. (2002). Priming against your will: How accessible alternatives affect goal pursuit. *Journal of Experimental Social Psychology*, **38**(4), 368–383.
- Simonson, I. (2005). In defense of consciousness: The role of conscious and unconscious inputs in consumer choice. *Journal of Consumer Psychology*, **15**(3), 211–217.
- Sleeth-Keppler, D. P. (2005). *Unpublished Data*. College Park, MD: University of Maryland.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, **211**(4481), 453–458.
- Von Neumann, J., & Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Princeton, NJ: Princeton University Press.
- Webster, D. M., & Kruglanski, A. W. (1998). Cognitive and social consequences of the motivation for closure. *The European Review of Psychology*, **8**, 133–173.
- Webster, D. M., & Kruglanski, A. W. (1998). Cognitive and social consequences of the need for cognitive closure. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 8, pp. 133–173). Hoboken, NJ: John Wiley & Sons Inc.
- Wilson, T. D., & Nisbett, R. E. (1978). The accuracy of verbal reports about the effects of stimuli on evaluations and behavior. *Social Psychology*, **41**(2), 118–131.
- Witt, J. K., Proffitt, D. R., & Epstein, W. (2004). Perceiving distance: A role of effort and intent. *Perception*, **33**(5), 577–590.
- Zhang, Y., Fishbach, A., & Kruglanski, A. W. (2007). The Dilution Model: How Additional Goals Undermine the Perceived Instrumentality of a Shared Path. *Journal of Personality and Social Psychology*, **92**(3), 389–401.