

## Motivated Closing of the Mind: “Seizing” and “Freezing”

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A theoretical framework is outlined in which the key construct is the need for (nonspecific) cognitive closure. The need for closure is a desire for definite knowledge on some issue. It represents a dimension of stable individual differences as well as a situationally evocable state. The need for closure has widely ramifying consequences for social-cognitive phenomena at the intrapersonal, interpersonal, and group levels of analysis. Those consequences derive from 2 general tendencies, those of urgency and permanence. The urgency tendency represents an individual's inclination to attain closure as soon as possible, and the permanence tendency represents an individual's inclination to maintain it for as long as possible. Empirical evidence for present theory attests to diverse need for closure effects on fundamental social psychological phenomena, including impression formation, stereotyping, attribution, persuasion, group decision making, and language use in intergroup contexts.

The construction of new knowledge is a pervasive human pursuit for both individuals and collectives. From relatively simple activities such as crossing a busy road to highly complex endeavors such as launching a space shuttle, new knowledge is indispensable for secure decisions and reasoned actions. The knowledge-construction process is often involved and intricate. It draws on background notions activated from memory and local information from the immediate context. It entails the extensive testing of hypotheses and the piecing of isolated cognitive bits into coherent wholes. It integrates inchoate sensations with articulate thoughts, detects meaningful signals in seas of ambient noise, and more.

Two aspects of knowledge construction are of present interest: its motivated nature and its social character. That knowledge construction has a motivational base should come as no particular surprise. The host of effortful activities it comprises pose considerable demands on resource allocation; hence, it may well require motivation to get under way. Specifically, individuals may desire knowledge on some topics and not others, and they may delimit their constructive endeavors to those particular domains. But what kind of a motivational variable is the “desire for knowledge”? At least two answers readily suggest themselves: Knowledge could be desired because it conveys welcome news in regard to a given concern or because it conveys any definite news (whether welcome or unwelcome) in instances in which such information is required for some purpose. For instance, a mother may desire to know that

her child did well on the Scholastic Aptitude Test (SAT) so that she may send her or him to a selective college, whereas the college admissions officer may desire to simply know how well or poorly the child did so that he or she may make the appropriate admission decision. The former type of desire has been referred to as the need for a specific closure, and the latter has been referred to as the need for a nonspecific closure. The need for a specific closure implies the desirability of a particular answer to a question (e.g., that one's child did well on the SAT), whereas the need for a nonspecific closure implies the desirability of any answer as long as it is definite (Kruglanski, 1989, 1990a, 1990b). Various needs for specific closure have received considerable emphasis in the social cognition literature (e.g., for reviews, see Kruglanski, *in press*; Kunda, 1990). The need for nonspecific closure has attracted much less attention. A major purpose of this article is to redress this imbalance by focusing on the latter type of desire.

In addition to its motivated nature, the knowledge-construction process is suffused with social significance. First, various social entities (other persons, groups, or social categories) are often the objects of knowledge-construction endeavors. In other words, constructive efforts are frequently meant to yield socially relevant knowledge. Furthermore, other people may often supply the informational means whereby constructive ends are attained. They may provide social comparison information (Festinger, 1954) or feedback pertinent to self-verification or self-enhancement motives (Swann, 1990). They may supply consensus information in instances in which consensus is desired, confirm one's favorite hypotheses, or bear witness to one's efficacy and control. Of course, people might impede rather than facilitate the attainment of desired knowledge and be occasionally the bearers of “bad news.” Even then, however, they remain motivationally relevant to one's epistemic purposes as potential sources of pertinent information. An important objective of the present article is, therefore, to flesh out the social psychological significance of knowledge-construction processes, particularly as these processes relate to the need for (nonspecific) closure.

In what follows, we present theory and research elucidating the nature of this need, its antecedent conditions, and its consequences. Essentially, we hope to demonstrate that the need for

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closure exerts a broad range of effects on the knowledge-construction process and hence, indirectly, on a wide range of related social psychological phenomena at the intrapersonal, interpersonal, and group levels of analysis.

### The Need for Closure

The need for cognitive closure refers to individuals' desire for a firm answer to a question and an aversion toward ambiguity. As used here, the term *need* is meant to denote a motivated tendency or proclivity rather than a tissue deficit (for a similar usage, see Cacioppo & Petty, 1982). We assume that the need for cognitive closure is akin to a person's goal (Pervin, 1989). As such, it may prompt activities aimed at the attainment of closure, bias the individual's choices and preferences toward closure-bound pursuits, and induce negative affect when closure is threatened or undermined and positive affect when it is facilitated or attained.

### A Motivational Continuum in Regard to Closure

We assume that the motivation toward closure varies along a continuum anchored at one end with a strong need for closure and at the other end with a strong need to avoid closure. Closure, in other words, may not be desired universally. Although in some circumstances people may strive to attain it, in other situations they may actively avoid it or exhibit little preference for it over ambiguity. Individuals at the need for closure end of the continuum may display considerable cognitive impatience or impulsivity: They may "leap" to judgment on the basis of inconclusive evidence and exhibit rigidity of thought and reluctance to entertain views different from their own. At the opposite end of the continuum, denoting a high need to avoid closure, people may savor uncertainty and be reluctant to commit to a definite opinion. In those circumstances, individuals may suspend judgment and be quick to engender alternatives to any emergent view.

Effects of the motivation for closure are assumed to be monotonic along the continuum. By this assumption, the motivational effects should be directionally similar for any pair of points on the continuum: A higher (vs. lower) degree of the need for closure should effect a higher or lower degree of some phenomenon, irrespective of the points' specific locations. Thus, comparing low and high need for closure conditions should yield effects directionally similar to those involved in comparing high and low need to avoid closure conditions. Evidence reviewed in subsequent sections consistently supports this assumption.

### Antecedents of the Motivation Toward Closure

What conditions may induce a given motivation toward closure? According to the present analysis, these may be conditions that highlight the perceived benefits or desirability of closure or of the absence of closure (see also Kruglanski, *in press-b*). For instance, a potential benefit of closure may be the ability to act or decide in time for meeting an important deadline. Thus, the need for closure should be heightened under time pressure. An alternative benefit of closure is removal of the necessity for fur-

ther information processing; if so, need for closure should be heightened under conditions that render processing difficult, laborious, or aversive. Some such conditions (e.g., environmental noise) may reside in the exogenous context of processing, whereas others (e.g., tedium and dullness of a cognitive task) may relate to endogenous aspects of processing (Kruglanski, 1975). Yet other conditions may stem from the perceiver's organismic state. For instance, people may find processing particularly arduous when in a state of fatigue. Accordingly, need for closure should be heightened under noise, when the task is unpleasant or dull, or when the individual is fatigued. It should also be heightened when closure is valued by significant others, because possessing closure may promise to earn their esteem and appreciation. Finally, it should be heightened, simply, when judgment on some topic is required (as compared with cases in which the individual feels free to remain opinionless).

The need for closure may be lowered and that to avoid closure heightened by conditions that highlight the costs of closure and the benefits of openness. In some situations, closure costs may be made salient by "fear of invalidity," or a gnawing concern about a costly judgmental mistake (e.g., when the perceiver is "outcome dependent" on the target; cf. Fiske & Neuberg, 1990). Under these conditions, people may desire to suspend judgment or avoid premature closure. This may seem to imply that validity concerns are necessarily at odds with those of closure. Obviously, however, no one would consciously adopt a closure she or he judged invalid. In fact, the very notion of subjective knowledge connotes the joint sense of closure and validity. To know, for example, that Washington, D.C., is the capital of the United States is at once to have closure on the topic and to believe it to be true. This logic notwithstanding, psychological concerns for closure and validity may arise fairly independently of each other; more important, they may pull information processing in diametrically opposed directions.

When closure concerns loom large, for example, individuals may perform closure-promoting activities without sacrificing their sense of validity. They may generate fewer competing hypotheses or suppress attention to information inconsistent with their hypotheses. Both processes may promote a sense of valid closure uncontested by alternative interpretations or inconsistent evidence. By contrast, when validity concerns are salient, people may engage in a thorough and extensive information search and generate multiple alternative interpretations to account for known facts. To wit, they may process information in exactly the opposite manner to that observed under a heightened need for closure. In fact, when validity represents the overriding concern, individuals may be motivated to postpone closure and, in extreme cases, to avoid it altogether. This is not inevitable, however: If a particular closure appears valid beyond the shadow of a doubt (e.g., because of the impeccable credibility of its source), the fear of invalidity may increase the tendency to embrace it rather than prompting its avoidance or postponement. Thus, closure avoidance should be conceptually distinguished from the fear of invalidity. Although closure avoidance may be often induced by such fear, this may not hold invariably.

The need to avoid (or postpone) closure may arise for alternative reasons, such as when the judgmental task is intrinsically enjoyable and interesting (relative to possible alternative

pursuits) and closure threatens to terminate this pleasant activity. Finally, as noted earlier, individuals may exhibit stable personal differences in the degree to which they value closure. Such differences may spring from various sources, such as cultural norms (Hofstede, 1980) or personal socialization histories that place a premium on confidence and "know-how." Accordingly, we have recently developed a measure of individual differences in need for closure and established its reliability and validity (Webster & Kruglanski, 1994).

A major upshot of the foregoing analysis is that the need for closure may be operationally defined in a broad variety of ways. If our theory is correct, such diverse operationalizations should prove functionally equivalent in regard to theoretically relevant phenomena. Specific evidence for such an equivalence is examined subsequently.

### Consequences of the Need for Closure: The Urgency and Permanence Tendencies

The motivation toward cognitive closure may affect the way individuals process information en route to the formation, alteration, or dissolution of knowledge. Because such processes are typically embedded in social-interaction contexts, they may significantly affect the way a person thinks about, feels about, acts toward, and even talks about others.

What form might such effects assume? We posit two general tendencies that need for closure may instill: the *urgency tendency* and the *permanence tendency*. The urgency tendency refers to the inclination to "seize" on closure quickly. People under a heightened need for closure may perceive that they desire closure immediately. Any further postponement of closure is experienced as bothersome, and the individual's overriding sense is that he or she simply cannot wait.

The permanence tendency refers to the desire to perpetuate closure, giving rise to the dual inclination (a) to preserve, or "freeze" on, past knowledge and (b) to safeguard future knowledge. Individuals under a heightened need for closure may thus desire an enduring closure and, in extreme cases, abhor losing closure ever again. The urgency and permanence notions both rest on the assumption that people under a heightened need for closure experience its absence as aversive. They may, therefore, wish to terminate this unpleasant state quickly (the urgency tendency) and keep it from recurring (the permanence tendency).

The abstract tendencies toward urgency and permanence may translate into a variety of concrete social psychological phenomena. Specifically, people under a heightened need for closure may seize on information appearing early in a sequence and freeze on it, becoming impervious to subsequent data. Such seizing and freezing trends may affect information processing and, indirectly, the multiple social psychological phenomena information processing may mediate.

#### *Extent of Information Processing*

Because of the tendency to seize on early information and immediately freeze, people under a heightened need for closure may process less information before committing to a judgment and generate fewer competing hypotheses to account for the available data. Paradoxically, they may feel more assured of

those judgments, even though they are less grounded in thorough exploration. Specifically, the less competing hypotheses a person might entertain, the more confidence he or she may have in those hypotheses (Kelley, 1971) simply because fewer alternatives to a given judgment may appear plausible, enhancing the individual's confidence in those that are.

#### *Cue Utilization*

A straightforward implication of our seizing and freezing postulate is that people under a heightened need for closure should base their judgments predominantly on early or preexisting cues rather than on later information. As a concrete implication, people under a high (vs. low) need for closure should often exhibit stronger primacy effects in impression formation (Asch, 1946). Furthermore, individuals under a heightened need for closure should rely more on stereotypes than on case-specific or individuating information simply because stereotypes represent preexisting knowledge structures, ready to be used momentarily, whereas individuating information may require extensive further processing. The tendency, based on need for closure, to overutilize early cues implies a disposition to keep one's estimates close to initial anchors rather than correct them in light of subsequent evidence (Tversky & Kahneman, 1974). A similar tendency induced by a heightened need for closure may augment the assimilation of judgments to semantic primes (Higgins, Rholes, & Jones, 1977). The rationale for these predictions is straightforward: Anchors as well as primes define initial bases for a judgment and should be seized and frozen on under a heightened need for closure.

### The Quest for Epistemic Permanence: Consensus and Consistency Strivings

Once a person under a heightened need for closure has managed to formulate a belief and freeze on it, he or she may tend to preserve it for future reference. This is what our permanence notion implies. Such a tendency may manifest itself in a preference for consensual opinions that are unlikely to be challenged and potentially undermined by significant others. As a corollary, people high in need for closure should prefer to associate with similar-minded others, feel positively disposed toward group members who facilitate consensus, and feel negatively disposed toward dissenters or opinion deviates who jeopardize consensus.

Beyond the consensus bias, permanence strivings might induce a bias toward consistency, expressed as a preference for general knowledge applicable across situations over situationally restricted knowledge. Among other things, such a preference may manifest itself in the way people use language in social contexts. Specifically, they may exhibit, under a heightened need for closure, an increased tendency to use trait terms or abstract category labels in describing others, simply because these terms and labels connote transsituational stability (e.g., to say someone is intelligent or friendly means she or he would behave intelligently or in a friendly manner across numerous specific instances).

### Separating Seizing From Freezing: The Point of Belief Crystallization

According to the present theory, a demarcation point separating seizing phenomena from those of freezing is the juncture during which a belief crystallizes and turns from hesitant conjecture to a subjectively firm "fact." Before that point, it should be possible to observe pure seizing, manifest, for example, in quickened pace and enhanced volume of the informational search under a heightened need for closure. As an additional implication, seizing should dispose people to be relatively open to persuasion attempts because such attempts promise to furnish the coveted closure. Subsequent to crystallization, by contrast, it should be possible to witness freezing manifest as a reluctance to continue information processing or a resistance to persuasive arguments aimed at undermining one's current closure and effecting cognitive change. The notion that the predecision action phase is characterized by cognitive openness (the deliberation mind-set) and that the postdecision phase is characterized by narrow restrictiveness (the implementation mind-set) was stressed also by Gollwitzer (1990).

In summary, our theory (a) views the need for closure as a desire for confident knowledge, (b) suggests that motivation toward closure varies along a continuum from a strong need for closure to a strong need to avoid closure, (c) views the need for closure both as an individual-differences variable and as a situationally inducible state prompted by the perceived benefits or costs of lacking closure, and (d) implies that need for closure may affect how an individual thinks, feels, acts toward and speaks about socially significant others. The empirical evidence for the present theory is reviewed in subsequent sections of this article. First, however, we consider its conceptual predecessors and examine its relation to those earlier notions. We ultimately argue that, commonalities with alternative formulations notwithstanding, the need for closure construct is unique and fundamentally different from previous relevant notions in its essence, antecedent conditions, and consequences.

### Historical Precursors of the Need for Closure Concept

Variability in individuals' tendency toward closed-mindedness or open-mindedness has been addressed in several prior discussions in the personality and social psychology literature. Freud (1923) linked openness to new experiences to the trait of basic trust rooted in successful passage through the oral period. By contrast, closed-mindedness was assumed to reflect a basic distrust rooted in an oral fixation. In its extreme form, such distrust was presumed to foster a paranoid delusional system totally closed off from reality and hence impervious to any informational or logical challenges to its integrity. Frenkel-Brunswick (1949) and Eysenck (1954) used the term *intolerance of ambiguity* to refer to perceptual-cognitive rigidity and emotional ambivalence (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950); Rokeach (1960) investigated the phenomenon of closed-mindedness, referring to the impact of belief systems on attitudes toward new information. Kagan (1972) posited that uncertainty resolution is a primary determinant of behavior, and Sorrentino carried out substantial research on "certainty" and "uncertainty" orientations, respectively referring

to the degree to which a person "likes to stick to familiar events and traditional beliefs" (Sorrentino & Short, 1986, p. 400) or "attempts to integrate new events or beliefs into already existing belief systems" (Sorrentino & Short, 1986, p. 399).

Need for closure shares some commonality with those earlier notions, but it is also unique in major respects. The primary commonality resides in the fact that those notions too refer to individuals' prejudiced disposition and their tendency to eschew new ideas or experiences. Unlike the need for closure construct, however, the earlier concepts were mostly psychodynamic, referred to personality typologies, were linked to particular contents of beliefs, were often conceived of as cognitive rather than motivational, and often emphasized the deleterious consequences of avoidance of uncertainty or the quest for certainty.

### Psychodynamic Character

Work by Adorno et al. (1950) was strongly committed to a psychoanalytic view of prejudiced individuals. According to this analysis, such people are characterized by a unique syndrome of correlated and dynamically interactive factors, including conventionalism, authoritarian submission, authoritarian aggression, anti-intraception, superstition and stereotypy, power and toughness, destructiveness and cynicism, projectivity, and sexual preoccupation (e.g., see Adorno et al., 1950, p. 228). Each of those variables is assumed to reflect unique aspects of one's psychosexual development. For instance, the conventional pattern reflects a lack of a firm superego so that the individual is "under the sway of its external representatives" (Adorno et al., 1950, p. 753). Authoritarian aggression and submission are thought to reflect a

specific resolution of the Oedipus complex [in which] love for the mother comes under a severe taboo. The resulting hatred against the father is then transformed by reaction-formation into love. The transformation of hatred into love, never succeeds completely . . . part of the preceding aggressiveness is . . . turned into masochism, while another part is left over as sadism, which seeks an outlet in those with whom the subject does not identify himself: ultimately the outgroup. (Adorno et al., 1950, p. 759)

Although critical of Adorno et al.'s (1950) confusion of authoritarianism with its specific manifestation in fascism, Rokeach (1960) maintained, nonetheless, a strong psychodynamic orientation in his analysis of closed and open minds. As he expressed it, "The closed system is nothing more than the total network of psychoanalytic defense mechanisms organized together to form a cognitive system and designed to shield a vulnerable mind" (Rokeach, 1960, p. 70). In more recent work, Sorrentino (Sorrentino & Short, 1986) carried on the psychoanalytic tradition by depicting the closed-minded, certainty-oriented individual as someone who "probably did not make it through the oral and anal stages of development successfully, thus developing a basic mistrust in the world, a dependence on authority, and a low sense of autonomy in an unfamiliar environment" (p. 400).

By contrast to the foregoing formulations, the present theoretical analysis makes no psychoanalytic commitments. Instead, the need for closure is assumed to have diverse potential

antecedents. Although early developmental anxieties may not be discounted, they are not considered the exclusive antecedents of this motivation. As noted earlier, for instance, different cultures may vary in the extent to which they value judgmental confidence and clarity (Hofstede, 1980). Through cultural learning and socialization, then, individuals may internalize those values and come to regard their realization as a matter of personal objective. Such individuals may be high in need for closure for cultural reasons. Finally, the psychodynamic emphasis is closely linked with an implication of pathology and dysfunctionality whereby closed-minded individuals are assumed to grossly distort reality in their need to avoid uncertainties. Need for closure theory carries no such implication. According to this conception, people under a high need for closure may be correct in their judgment if the initial cue they seized and froze on was correct. To the contrary, people with a high need to avoid closure may commit errors if they too readily "unfroze" correct judgments and diluted them through excessive openness to misleading or irrelevant information.

### *Personality Versus Situation*

Furthermore, the present theory highlights especially the potential situational determinants of the need for closure. The very notion of situational antecedents contrasts sharply with previous formulations of closed-mindedness and open-mindedness in terms of personality typologies. Because these formulations are imbued with psychoanalytic meanings, they are rather incompatible with a situational analysis: The psychodynamic processes they assume are typically described at a macro level of analysis; they relate to protracted developmental phases (the oral or anal period, for example) taking years to unfold. It is unlikely that they may find functionally equivalent counterparts in microlevel situational factors of incomparably briefer duration. Precisely such functional equivalence, however, is asserted by the present analysis, whereby need for closure is determined by perceived benefits or costs of closed or open states as influenced by situational, cultural, or personality factors.

### *Cognitive Style Versus Motive*

Whereas the need for closure is a distinctly motivational construct, previous psychological analyses depicted closed-mindedness and open-mindedness in terms of cognitive style or structure. Sorrentino and Short (1986), for example, explicitly disavowed a motivational interpretation of the uncertainty orientation and described it "as a cognitive rather than a motivational variable" (p. 382) better thought of as "cold" rather than "hot" (p. 392). Similarly, Rokeach (1960) viewed closed-mindedness and open-mindedness as properties of belief-disbelief systems and stressed the predominantly cognitive character of his theory (e.g., p. 399).

### *Content Specificity*

By contrast, the theory of the authoritarian personality (Adorno et al., 1950) does depict rigidity as motivated, specifically by ego defenses against aggressive impulses toward authority figures. However, psychodynamic defenses may lend rigidity

to specific relevant belief contents related, for example, to admiration of the powerful, or the in-group, and disdain for the powerless, or the out-group. Even though such rigidity may generalize to other domains as well (Frenkel-Brunswick, 1949, 1951), these processes are secondary and derivative from rigidity in a circumscribed domain of conflicted content areas. Rokeach's (1960) work on dogmatism also incorporated significant content elements. For example, the closed belief system was considered to involve the assumption that "the world one lives in is . . . threatening" or that "authority is absolute . . . and people are to be accepted or rejected according to their agreement or disagreement with such authority" (p. 56). Similarly, the open belief system was presumed to hold that "the world one lives in . . . is a friendly one" and that "authority is not absolute . . . and people are not to be evaluated (if they are to be evaluated at all) according to their agreement or disagreement with such authority" (Rokeach, 1960, p. 56). By contrast to the content specificity in the preceding formulations, need for closure theory eschews commitment to particular belief contents and posits that the desire for closure may manifest itself equally in regard to diverse types of belief.

### *Unilaterality of Emphasis*

Previous relevant formulations often stressed unilaterally the tendency to eschew uncertainty or seek certainty. Uncertainty eschewal was central to Adorno et al.'s (1950) formulation and its emphasis on the defensive function of cognitive rigidity. Accordingly, Adorno et al. focused on the negative valence of ambiguity, stressing its avoidance or intolerance. A unilateral emphasis on uncertainty reduction also characterized Kagan's (1972) formulation that viewed such reduction as a primary motive for behavior. Similarly, Sorrentino and Short (1986) viewed orientation toward "clarity about self or the environment" (p. 382) as primary for both certainty-oriented and uncertainty-oriented individuals.

Even though they may differ in emphasis on the approach of certainty or avoidance of uncertainty aspect, all of the preceding analyses underscore the same trend toward increased certainty or decreased uncertainty. Need for closure theory, on the other hand, suggests that the trend may be reversed under some conditions and that people may actually approach uncertainty if its perceived benefits and the perceived costs of certainty outweigh the perceived costs of uncertainty and the benefits of certainty.

### *Empirical Relations of Need for Closure With Related Constructs*

The foregoing discussion suggests that although need for closure may share a degree of commonality with alternative constructs relevant to closed-mindedness and open-mindedness, it differs from those alternative concepts in important respects. Empirically, this should result in low to moderate correlations between the need for closure and related concepts. Extant evidence is consistent with this supposition. In psychometric work on the Need for Closure Scale, Webster and Kruglanski (1994) reported correlations of .26 between need for closure and the F scale assessing authoritarianism (Sanford, Adorno, Frenkel-

Brunswik, & Levinson, 1950), .29 between need for closure and intolerance of ambiguity (Frenkel-Brunswik, 1949), and .28 between need for closure and dogmatism (Rokeach, 1960).

### *Intelligence and Need for Closure*

Because individuals high in need for closure often limit their information-processing activities, this may suggest a negative relationship between intelligence and need for closure. On the other hand, need for closure may sometimes promote extensive information processing in instances in which closure is lacking. Theoretically, then, the relationship between need for closure and intelligence is not readily apparent. Empirically, this relation is nonsignificant ( $r = -.17$ ).

### *Further Connections and Distinctions: Need for Cognition, Central-Systematic Processing, and Peripheral-Heuristic Processing*

The need for cognition refers to the extent to which one "engages in and enjoys thinking" (Cacioppo & Petty, 1982, p. 1). In other words, for people high in this need, the activity of thinking as such is the desired end. By contrast, for those high in need for closure, the desired end is cognitive closure. Although having closure obviates the necessity to think further about an issue, one may refrain from thinking without necessarily attaining closure. Thus, although some negative relation between the need for cognition and the need for closure should be expected, it should not be very strong. The empirical correlation between the two constructs is, in fact, low and negative ( $r = -.28$ ; Webster & Kruglanski, 1994).

Need for cognition is one among several variables assumed to effect a processing shift from the reliance on peripheral cues to a thorough consideration of central informational contents (Petty & Cacioppo, 1986). A somewhat similar distinction has been drawn between the processing of information heuristically and systematically (Chaiken, Lieberman, & Eagly, 1989). The question, therefore, is how need for closure theory relates to the peripheral-heuristic versus central-systematic distinctions. The answer is that although our theory shares some common ground with those alternative conceptions, it differs in important respects. The commonality resides in the fact that need for closure theory also posits conditions under which people process information briefly and superficially and others wherein they do so thoroughly and methodically. Unlike the alternative formulations, however, need for closure theory does not postulate two qualitatively different modes of information processing. Rather, it regards the difference between brief and thorough processing as a matter of extent. Furthermore, whereas both the peripheral-central and the heuristic-systematic models may view some of the information-processing costs (produced, for example, by ambient noise, fatigue, or time pressure) as depleting the individual's cognitive capacity, the present analysis stresses their motivating potential in arousing the need for closure. A detailed consideration of the capacity versus motivation issue is undertaken at a later juncture.

### *Openness to Experience*

Finally, the present distinction between closed-mindedness and open-mindedness is shared by the Openness factor of the

big five (McCrae & Costa, 1985). The specific areas to which one might be open or closed include fantasy, aesthetics, feelings, actions, ideas, and values (Costa & McCrae, 1992; McCrae, 1993-1994). As in the present conception, then, the closed and open dimension is seen as relevant to a broad range of domains rather than being restricted to specific contents. Also, both conceptions highlight the possibility of motivated openness, in counterdistinction to alternative notions stressing the ubiquitous quest for certainty. Again, however, openness to experience is essentially an individual-differences dimension to which situational considerations seem rather foreign. Furthermore, the openness to experience construct depicts a general psychological syndrome (manifest, for example, in artistic creativity, susceptibility to hypnosis, rich fantasy lives, and unconventional attitudes) rather than the effects of a specific motivation. The motivational part of the syndrome includes need for change, sensation seeking, and intellectual understanding, which are rather different from need for closure per se. For instance, according to our conception, a person under a need for closure can exhibit openness to information (i.e., seizing) in the pre-crystallization phase of judgment formation. Such a possibility does not seem relevant to the openness construct.

In summary, then, the present need for closure theory seems both conceptually and empirically distinct from relevant alternative formulations. It appears to be more general than historical treatments of open-mindedness and closed-mindedness and less committed to specific antecedents (e.g., of psychosexual origins), cognitive contents (e.g., assumptions about authority), or approach-avoidance trends (e.g., toward certainty and away from uncertainty). It also constitutes a distinctly motivational theory that highlights the effects of its key variable on the extent of processing rather than on shifts from one qualitative processing mode to another. Those unique properties of the need for closure construct yield a variety of predictions not readily derivable from previous formulations. We turn now to the empirical evidence for those predictions.

## *Empirical Evidence*

### *Seizing and Freezing Effects*

Earlier we posited two general tendencies that need for closure may instigate: the urgency tendency of seizing on judgmentally relevant cues and the permanence tendency of freezing on judgments the cues imply. Operating jointly, the seizing and freezing sequence may produce a broad range of judgmental effects observable under a heightened need for closure.

### *Extent of Information Processing*

At a minimum, the seizing and freezing mechanism implies a reduced extent of information processing under a heightened need for closure. The speeded-up reliance on early cues implied by seizing and the truncation of further exploration due to freezing suggest that individuals under a high (vs. low) need for closure should consider less evidence before forming a judgment. In an experiment relevant to this proposition, Mayseless and Kruglanski (1987, Study 2) had participants perform a tachistoscopic recognition task of identifying barely visible digits



on a screen. As a means of arousing the need for closure, participants were told that forming unambiguous, clear-cut opinions is positively correlated with high mental concentration and intelligence. This manipulation was designed to enhance the perceived value (or benefit) of closure and, hence, to increase the need for closure. Note that stating that unambiguous or clear-cut opinions are valuable does not, in itself, demand briefer information processing. To the contrary, it seems more reasonable to assume that the arrival at clarity and the dispelling of ambiguity would require, if anything, more rather than less extensive processing. The present seizing and freezing notion implies the opposite, of course.

As a means of inducing the need to avoid closure, participants were given accuracy instructions and promised extra experimental credit for correctly identifying 9 of 10 digits. A neutral control condition was also included in which no motivational induction took place. Participants were allowed to operate the tachistoscope an unlimited number of times. As predicted, their extent of informational search (number of times they operated the tachistoscope) was lowest in the need for closure condition, intermediate in the control condition, and highest in the need to avoid closure condition.

### *Hypothesis Generation*

In addition to a reduced extent of processing "external" stimulus information, the seizing and freezing notions imply that, under heightened need for closure, there will be a parallel reduction in "internal" hypothesis generation. Presumably, those two processes are intimately linked: Examination of external information may suggest new, internally formed hypotheses, the testing of which may require, in turn, further processing of external information. Need for closure effects on hypothesis generation were specifically addressed in another experiment conducted by Mayseless and Kruglanski (1987, Study 3). Participants were shown enlarged photographs of parts of common objects (e.g., a comb, a toothbrush, and a nail). These photos were taken from unusual angles, masking the objects' actual nature. On each trial, participants were urged to list the maximal number of hypotheses concerning an object's identity and ultimately chose the identity most likely to be correct. As in the study mentioned earlier (Mayseless & Kruglanski, 1987, Study 2), need for closure was induced by informing participants that clear-cut opinions relate to mental concentration and intelligence. Again, this, in and of itself, should not artificially "demand" a curtailment of hypothesis generation. Rather, an emphasis on clarity and intelligence may demand increased hypothesis generation, contrary to the present prediction.

To induce the need to avoid closure, the instructions noted a correlation between the desirable mental qualities and correct visual recognition. As in the previous study, a neutral control condition devoid of a motivational induction was included. The results showed, as predicted, that participants in the need to avoid closure condition generated the largest number of hypotheses, followed by participants in the control condition; participants in the need for closure condition produced the fewest hypotheses.

### *Subjective Confidence*

An interesting corollary to the notion that individuals under a high (vs. low) need for closure generate fewer hypotheses is that they will be quicker to attain high judgmental confidence. This implication follows from Kelley's (1971) discounting principle, whereby reduction in the number of alternative hypotheses should boost an individual's confidence in each hypothesis. Relevant to this prediction, in the tachistoscopic recognition study conducted by Mayseless and Kruglanski (1987, Study 2), participants' confidence in their initial hypotheses and the magnitude of confidence shifts (upward or downward) occasioned by each successive stimulus presentation were significantly lower in the need to avoid closure condition than in the need for closure condition, with the control condition falling in the middle.

Elevated confidence of participants under heightened need for closure has been replicated in several studies using widely divergent methods, such as ambient noise (Kruglanski & Webster, 1991; Kruglanski, Webster, & Klem, 1993), dullness of the task (Webster, 1993), and time pressure (Kruglanski & Webster, 1991), of inducing this motivation. Identical results were obtained when need for closure was assessed via our individual-differences measure (Webster & Kruglanski, 1994) rather than manipulated situationally.

Elevated confidence under a heightened need for closure is striking against the backdrop of reduced information processing under those very circumstances. This finding is incongruous with the common presumption that attainment of secure views requires more rather than less extensive processing, and it defines an "unfounded confidence" paradox under a heightened need for closure.

### *Seeking Diagnostic or Prototypical Information*

Restriction of hypothesis generation under a heightened need for closure (Mayseless & Kruglanski, 1987, Study 3) should, finally, affect not only the amount of information sought by hypothesis-testing participants but also the type of information sought. Specifically, under high need for closure, participants may seek prototypical information about a category, whereas, under high need to avoid closure, they might instead seek diagnostic information (Trope & Bassok, 1983) capable of discriminating among different categories. Consider an interviewer testing the focal hypothesis that an interviewee is a painter. Under a high need for closure, this individual may refrain from generating specific competing alternatives to this hypothesis and search for information capable of demarcating it from the diffuse nonpainter hypothesis. Such information may pertain to features prototypical of painters (e.g., "bohemian" life-style or artistic ability). The case may be very different, however, if the individual's need to avoid closure was aroused. This might motivate her or him to be sensitive to possible specific alternatives to the hypothesis, such as that the interviewee is an architect. If so, the interviewer might specifically seek information diagnostic in regard to the painter-architect pair: Artistic ability is presumably shared by painters and architects alike and hence is nondiagnostic, whereas bohemian life-style is diagnostic because it may principally characterize painters but not ar-

chitects. In research designed to investigate these possibilities (Kruglanski & Mayseless, 1988), we asked participants to evaluate whether a target belonged to a given professional category, subtly hinting at a competing alternative possibility. As expected, individuals under a high need for closure, manipulated through implied time pressure, sought more prototypical information than diagnostic information, whereas those under need to avoid closure, manipulated through instilled fear of invalidity, sought more diagnostic information capable of differentiating between the competing alternatives.

### *Early-Cue Utilization*

Perhaps the broadest implication of the seizing and freezing mechanism is that under a high (vs. low) need for closure, individuals tend to base their final judgments on early cues. Because of the urgency tendency, such cues should be quickly utilized to form an initial judgment (seizing), and, because of the permanence tendency, such a judgment should tend to stay fixed (freezing) rather than be altered in light of subsequent evidence. This fundamental process may underlie a diverse array of phenomena that, at first glance, might appear unrelated.

*Impressional-primacy effects.* An obvious such phenomenon is the impressional "primacy effect" (Asch, 1946; Luchins, 1957), that is, the tendency to base impressions of a social target more on information presented early versus late in a sequence. If primacy effects are an instance of the seizing and freezing process, they should be appropriately magnified under high need for closure and attenuated under high need to avoid closure. This prediction has received support in several studies differing in the ways in which needs for closure or closure avoidance were operationalized. Specifically, need for closure has been variously operationalized in terms of scores on the Need for Closure Scale (Webster & Kruglanski, 1994), time pressure (Freund, Kruglanski, & Schpitzajzen, 1985; Heaton & Kruglanski, 1991; Kruglanski & Freund, 1983), instructions to form an overall evaluative judgment of the target (vs. separately evaluating each of his or her characteristics; Freund et al., 1985), and degree of mental fatigue (Webster, Richter, & Kruglanski, 1995). Need to avoid closure has been operationalized in terms of evaluation apprehension (Freund et al., 1985; Kruglanski & Freund, 1983) or potential costs to the evaluation target (in the case of a participant's mistake; Freund et al., 1985). As predicted, in all of these studies, the magnitude of primacy effects varied positively with need for closure and negatively with need to avoid closure.

Note, however, that in the research described thus far, it was relatively easy for participants to downplay the late appearing evidence if motivated to do so. It is quite possible that if the late evidence is particularly compelling and participants high in need for closure are pressured to seriously consider it, they may change their mind more abruptly and completely than those low in need for closure, manifesting a recency effect. In dynamic systems terms (Vallacher & Nowak, in press), need for closure could serve as a "control parameter," effecting quick gravitation to "attractors" representing conclusions implied by the early and late appearing evidence.

*Anchoring effects.* A different instance of early-cue utilization may underlie the "anchoring" effect discovered by Tversky

and Kahneman (1974). Consider a probability-estimation task (cf. Bar-Hillel, 1973) in which participants assess the probability of compound conjunctive or disjunctive events. Participants typically use the probability of the simple constituent events as an anchor and then adjust. When the adjustment is insufficient, they should therefore overestimate the probability of conjunctive events (calculation of which involves the multiplication of fractions) and underestimate the probability of disjunctive events (calculation of which involves the addition of fractions). If anchoring represents a special case of cue utilization, it should be appropriately affected by the need for closure. Consistent with this notion, participants' tendency to overestimate the likelihood of conjunctive events and underestimate that of disjunctive events increased under need for closure manipulated via time pressure and decreased under need to avoid closure manipulated by evaluation apprehension (Kruglanski & Freund, 1983, Study 2).

*The correspondence bias.* The correspondence bias in person perception (Jones, 1979) is among the most persistently studied phenomena in social cognition (see discussion by Trope & Higgins, 1993). It is, therefore, of considerable interest that it too may represent a special case of early-cue utilization and be appropriately influenced by the need for closure. The correspondence bias refers to a perceiver tendency to overascribe actors' behavior to personal inclinations, even in the presence of situational pressures that in and of themselves should be capable of eliciting the behavior. In an original demonstration of this phenomenon, Jones and Harris (1967) presented participants with essays allegedly written by a person given either a free choice or no choice in the matter of doing so. In both cases, that is, even when the writer was denied choice, participants assumed that his or her attitude was largely congruent with the essay content.

Different theorists (Gilbert, Pelham, & Krull, 1988; Jones, 1979; Quattrone, 1982) have implied that the underlying mechanism for the correspondence bias could involve the anchoring and insufficient adjustment process discussed earlier. Thus, when participants come to judge the writer's attitude, the most salient evidence is the very behavior that took place. Often, the earliest hypothesis this suggests is that the behavior faithfully mirrored the writer's attitude. This attitude-correspondence hypothesis may pop to mind spontaneously or "automatically" and serve as an initial anchor to be subsequently adjusted via a "controlled" cognitive process during which further relevant evidence (e.g., concerning pertinent situational constraints) is considered.

Such controlled adjustment, however, may require substantial cognitive effort. For instance, Gilbert et al. (1988) found that when perceivers were cognitively busy, the correspondence bias was enhanced. This may mean that the increased effort required by the adjustment process was more than the participants were willing to put out, which suggests that motivational considerations may indeed enter into the correspondence bias. Research by Tetlock (e.g., 1985) supports this possibility. He found that such bias was markedly reduced when participants were made to feel accountable for their judgments. Presumably, manipulation of accountability motivated participants to process information in a more discriminating manner, affording a more adequate adjustment of the initial bias.



The preceding findings are consistent with the notion that, as with the primacy or anchoring effect, the correspondence bias represents an over-utilization of early cues. If so, the correspondence bias too should be appropriately affected by the need for closure. In a recent set of studies, Webster (1993) tested this proposition, manipulating the need for closure via task attractiveness. Her underlying assumption was that when an activity is attractive or intrinsically motivated (e.g., Deci & Ryan, 1985; Higgins & Trope, 1990; Kruglanski, 1975), this should induce the motivation to extensively explore it (Berlyne, 1960) and, hence, to avoid premature closure. By contrast, when an activity is extrinsically motivated, the motivation may be to reach closure quickly so as to reach the exogenous reward without delay.

An attitude-attribution task was used in which a target made a speech critical of student-exchange programs under free-choice or no-choice conditions. As a means of portraying this task as unattractive, the task participants expected to perform subsequently (the watching of comedy videos) promised to be particularly attractive. This was assumed to render relatively unappealing or subjectively costly the current, duller task and hence to elevate the need for closure.

As a means of portraying the same task as attractive, the subsequent task promised to be particularly unattractive (watching a video of a statistics lecture). This was assumed to render the current task subjectively appealing and hence to lower the need for closure. Finally, in a third, control condition, the subsequent task was portrayed as largely similar to the current one (also involving attitude attributions), lending it intermediate appeal. Manipulation checks confirmed that the experimental manipulations produced the corresponding differences in need for cognitive closure. Most important, the correspondence bias in the no-choice condition was affected by the need for closure in the predicted manner: Substantial correspondence bias was already present in the control condition (replicating prior research), and such bias was significantly enhanced in the unattractive task condition and completely eliminated in the attractive task condition.

The same pattern of results was obtained in Webster's second study, in which need for closure was assessed via the Need for Closure Scale (Webster & Kruglanski, 1994). Finally, when the initial cues implied a situational rather than a personal attribution, the results of the previous two studies were completely reversed. The tendency to overascribe the essay to the writer's attitude was reduced under a high need for closure (manipulated via task attractiveness) and enhanced under a low need for closure, both as compared with the control condition. This last finding is particularly significant because it demonstrates that need for closure effects are content free and depend on the order in which cues are received rather than on their specific substance (e.g., implying a personal or a situational attribution).

*Stereotypic judgments.* From a social psychological perspective, some particularly interesting sources of early cues are previously formed stereotypes, prejudices or attitudes readily accessible in memory. Such preexisting knowledge structures may preempt the use of case-specific (or individuating) information in the forming of social judgments. The present seizing and freezing mechanism suggests that such preemption should be particularly likely under a heightened need for closure, simply because exten-

sive processing of case-specific information may substantially postpone closure. In an early demonstration of those effects, Kruglanski and Freund (1983, Study 3) found that ethnic stereotypes of Ashkenazi and Sephardi Jews influenced grade assignments for a literary composition more in conditions likely to elevate the graders' need for closure (time pressure, lack of accountability, or both) than in conditions likely to reduce it (accountability and no time pressure). Time pressure also increased the degree to which preexisting prejudice against women in management versus individuating information about specific applicants' qualifications tended to affect discrimination toward female versus male candidates (Jamieson & Zanna, 1989).

*Construct accessibility effects.* A key assumption in predicting more pronounced judgmental influence of stereotypes under a high (vs. low) need for closure is that such stereotypes are highly accessible in memory. Such accessible guides to judgment should be seized and frozen on under a heightened need for closure. A direct test of this assumption was recently carried out by Ford and Kruglanski (1995), who used a priming paradigm developed by Higgins et al. (1977). In the context of an allegedly unrelated memory experiment, participants were primed by either the negatively valenced adjective *reckless* or the positively valenced adjective *adventurous*. They were subsequently presented a passage about Donald that was ambiguous with respect to the adventurous-reckless pair. Participants' task was to characterize Donald using a single word. In this situation, participants high in dispositional need for closure (Webster & Kruglanski, 1994) exhibited stronger assimilation of judgment to prime than participants low in this need. That is, participants high (vs. low) in need for closure tended more to characterize Donald in terms suggesting recklessness in the negative prime condition and adventurousness in the positive prime condition. An independently executed study by Thompson, Roman, Moscovitz, Chaiken, and Bargh (1994), using a different method of priming (the scrambled sentence technique) and of assessing need for closure (Neuberg & Newsom's, 1993, Personal Need for Structure Scale), yielded the same results. Participants high in need for structure-closure exhibited greater assimilation of their judgments to primed constructs than participants low in this need. Finally, both Ford and Kruglanski (1995) and Thompson et al. (1994) succeeded in significantly reducing the assimilation-to-prime effect under accuracy instructions (i.e., in conditions likely to reduce participants' need for closure).

### *Isolating the Urgency and Permanence Effects*

Whereas the seizing and freezing research described earlier examined the joint workings of the urgency and permanence tendencies, further studies have aimed at separating their effects. In the next section, we examine work pertaining to permanence phenomena as such, followed by research on the boundary conditions for urgency versus permanence effects.

### *Consensus and Consistency Biases*

As already noted, the permanence tendency involves the desire to maintain closure over time. The freezing phenomenon represents one manifestation of such a desire: Once closure has been attained, confronting it with new information might risk

its subsequent dissolution. Freezing may be understood as an attempt to forestall this possibility. However, the permanence tendency may manifest itself in other ways as well, specifically in a bias toward consensual judgments unlikely to be contested by significant others. Furthermore, it may promote a preference for abstract judgments connoting transsituational consistency, and in this sense permanence, of knowledge.

### Consensus

An indication that need for closure may enhance the desire for consensus appeared in a pair of studies conducted by Kruglanski et al. (1993). In this research, the participant acted as a juror whose task was to discuss a legal case with another juror. Half of the participants received prior information allowing them to form a fairly confident opinion about the case. The remaining participants received no prior information, forestalling secure opinion formation. The need for closure was either manipulated via noise produced by a computer printer (Kruglanski et al., 1993, Study 2) or assessed via the Need for Closure Scale (Study 3). In both cases, participants under a high need for closure professed greater desire to agree with the other juror (i.e., to attain consensus) than did participants under a low need for closure. Of even greater interest, the specific manner in which participants tended to deal with their desire for consensus varied as function of the informational conditions: When presence of an information base led participants to crystallize a prior opinion, they professed a preference for an easily persuadable partner. Presumably, such a partner could be readily won over to the participant's side, affording consensus via what Festinger (1950) called the "change other" strategy. By contrast, when absence of an informational base kept participants from crystallizing a prior opinion, they professed a significant preference for a persuasive partner. Presumably, such a partner could readily convince the participant to adopt a given view, hence forging consensus by what Festinger (1950) called the "change self" strategy. These findings, too, emerged regardless of whether need for closure was operationalized via ambient noise or scores on the Need for Closure Scale.

### Rejection of Opinion Deviates

When both the "change other" and "change self" strategies fail, however, there may exist a third possible way of attaining consensus in a group. It consists of "rejecting the deviate" and thus achieving consensus in a group by excluding the dissenters (Festinger, 1950; Schachter, 1951). If the permanence tendency fosters a quest for consensus and if, under the appropriate conditions, this encourages the rejection of deviates, heightening group members' need for closure should yield evidence of enhanced "rejectionism." This prediction was investigated in a series of experiments by Kruglanski and Webster (1991).

In their first study, need for closure was operationally defined via time pressure or temporal proximity of attitude assessment to the group-decision deadline. Our assumption has been that when the deadline is relatively remote, group members' predominant concern might be to safeguard the quality of their decision. This may induce a need to avoid premature closure and increase the tolerance for ambiguity induced by dissenting views. With the deadline approaching, however, the implied

time pressure may induce an overriding need for closure. This may reduce group members' tolerance for dissent and increase their tendency to reject the deviates.

In a field experiment designed to test those ideas (Kruglanski & Webster, 1991, Study 1), groups of Tel Aviv (boy and girl) scouts were presented with a decision of choosing a location for their annual "working camp" of 2 weeks' duration. Two choices of kibbutz settlements were presented. One was an affluent, centrally located kibbutz (Naan) amply endowed with such accoutrements as swimming pools, tennis courts, and color TVs. The other choice was a fledgling borderline kibbutz (Ktora) in the Judean desert lacking at the time even such basic amenities as in-house bathrooms.

Despite what to some might appear the obvious choice, the idealistically inspired scouts predominantly preferred the rugged, little settlement over its lush alternative. This fact was well known to the investigators and was treated as the group's consensual opinion. To introduce our deviancy manipulation, we asked one member in each group (known to occupy a median sociometric standing) to argue for either the consensual choice (the conformist role) or the unpopular alternative (the deviant role) and to do so either early on in the deliberation process or late, near the putative deadline.

Actually, there existed three experimental conditions related to the timing of opinion expression. In the *objectively early* condition, the confederate announced her or his (conforming or deviant) opinion near the commencement of discussion. In the *objectively late* condition, he or she did so near the expected deadline. In the *subjectively early* condition, she or he did so at the same actual time as in the objectively late condition; because the deadline was appropriately postponed, however, the participant believed that he or she had as much discussion time remaining as did others in the subjectively early condition.

The available evidence confirmed that participants' need for closure was proportionate to the discussion time they believed they had at their disposal. Specifically, participants' differentiation between attractiveness of the two choice alternatives was significantly lower in the early conditions (objective as well as subjective) than in the (objectively) late condition. This suggests that participants were more open-minded to both alternatives when they perceived little (vs. a great deal of) time pressure to make up their mind. Those findings were paralleled by expressed confidence in the attractiveness ratings, which was significantly higher at the late versus the early (objective and subjective) points. Both findings support the notion that time pressure, induced by perceived proximity of the deadline, contributed in the expected manner to need for closure arousal.

The main dependent variable of interest was an evaluative shift toward the confederate in the deviant and conformist roles. Results are depicted in Figure 1. As can be seen, the evaluative shifts toward the conformist were negligible and did not appreciably vary as a function of timing. The shifts toward the deviant exhibited a strikingly different pattern. They were progressively more negative as the expected deadline drew near.

We (Kruglanski & Webster, 1991, Study 2) conceptually replicated this experiment, manipulating need for closure via ambient noise. Groups of University of Maryland students were instructed to discuss to consensus compulsory drug testing for campus athletes. Students were preselected to be in favor of

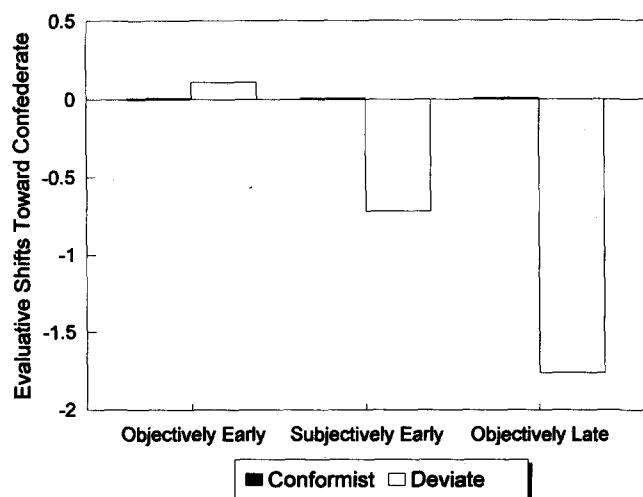


Figure 1. Evaluations of the conformist and the deviate at different degrees of proximity to the group-decision deadline.

such testing. Two members of each group were confederates, whose behavior during the discussion was systematically varied as function of our experimental manipulations. One confederate enacted a conformist's role and expressed opinions consistent with the expected consensus (i.e., in favor of drug testing). The other confederate enacted a deviate's role and expressed opinions at odds with the expected consensus (arguing against drug testing). As a means of controlling for possible effects due to the confederates' personalities, the conformist and deviate roles were rotated across the experimental sessions.

As in the Kruglanski et al. (1993) research described earlier, the noise was produced via a computer printer. We assumed that in a noisy environment, information processing would be more laborious, and hence subjectively costly, and that this would heighten participants' need for closure, leading to greater rejection of the deviate.

If participants in the noise (vs. no-noise) condition experience a higher need for closure, they may experience greater subjective confidence in their opinion. This turned out to be the case, although the difference was statistically borderline ( $p < .13$ ). Of greater interest, the deviate was evaluated more negatively ( $p < .001$ ) under noise than under no noise (see Table 1). Although the conformist was evaluated somewhat more posi-

tively under noise (vs. no noise), this difference was not significant.

To examine the possible alternative interpretation that derogation of the deviate under noise stemmed from the irritability that noise might have induced rather than the need for closure, we replicated our experiment (Kruglanski & Webster, 1991, Study 3) with a single exception. Participants in one condition were provided an alternative way of safeguarding collective closure: the possibility of formally excluding the deviate from decision making. Specifically, participants in this condition were allowed to form a decision by majority rather than by consensus. To see whether the noise manipulation induced differences in the need for closure, we looked again at participants' expressed confidence in their opinion. As expected, the confidence ratings were significantly higher ( $p < .015$ ) under noise than under no noise. Of greater interest, the only condition in which the deviate was downgraded was the noise-consensus cell (see Table 2). Thus, it appears that noise-induced irritability may not have accounted for derogation of the deviate. The deviate would have been upsetting enough to foster rejection only when he or she may have undermined the other members' sense of closure by constituting a dissenting voice in a significant reference group.

Additional evidence that rejection is not merely the consequence of noise-related irritability is the finding, described subsequently, that the conformist might be actually evaluated more positively under noise (vs. no noise). The reason this may not have been apparent in the research described thus far is that, in those experiments, the conformist merely reiterated the normative opinion, and hence her or his statements may have lacked saliency. As a means of overcoming this problem, in our last study (Kruglanski & Webster, 1991, Study 4), the conformist was made to assume a leader's role (including initiation of conversations with the deviate and issuing of repeated reminders to the group of the consensus objective). In this study, too, participants under noise (vs. no noise) reported higher judgmental confidence ( $p < .01$ ). More important, whereas the deviate continued to be downgraded more ( $p < .0001$ ) under noise (vs. no noise), the conformist was actually applauded more ( $p < .01$ ) in this condition. Taken as a body, then, the reviewed findings support the notion that need for closure increases participants' desire for consensus and that this may lead to derogating those who hinder consensus and countenancing those who facilitate it.

Table 1  
Mean Evaluations of the Deviate and the Conformist as a Function of Environmental Noise

Confederate's opinion	Noise	No noise
Deviate	8.12	14.87
Conformist	15.75	14.68

Note. Adapted from "Group Members' Reactions to Opinion Deviates and Conformists at Varying Degrees of Proximity to Decision Deadline and of Environmental Noise," by A. W. Kruglanski and D. M. Webster, 1991, *Journal of Personality and Social Psychology*, 61, p. 219. Copyright 1991 by the American Psychological Association.

Table 2  
Mean Evaluations of the Deviate and the Conformist as a Function of Environmental Noise and Group-Decision Rule

Confederate's opinion	Consensus rule		Majority rule	
	Noise	No noise	Noise	No noise
Deviate	11.87	21.07	18.67	20.00
Conformist	20.75	22.36	20.58	20.50

Note. Adapted from "Group Members' Reactions to Opinion Deviates and Conformists at Varying Degrees of Proximity to Decision Deadline and of Environmental Noise," by A. W. Kruglanski and D. M. Webster, 1991, *Journal of Personality and Social Psychology*, 61, p. 221. Copyright 1991 by the American Psychological Association.

### *Need for Closure-Based Permanence Seeking and Linguistic Abstraction Biases*

If need for closure induces the tendency to seek permanent knowledge and avoid the recurrence of ambiguity, such a need should also foster bias toward general, transsituationally stable knowledge. Accordingly, people under a heightened need for closure should prefer abstract descriptions and category labels over concrete (and hence situationally specific) ones.

### *Global Attributions for Failure*

Consistent with this reasoning, Mikulincer, Yinon, and Kabili (1991) found, in one study, that "need for structure" assessed via a questionnaire (Naccarato, Thompson, & Parker, 1986), a notion highly akin to the need for closure, was positively correlated with stable and global self-attributions for failure assessed by the Attributional Style Questionnaire (Seligman, Abramson, Semmel, & von Baeyer, 1979). By contrast, an individual-differences measure of the "fear of invalidity" (Naccarato et al., 1986), assumed to often foster a need to avoid closure, was associated with the tendency to make specific (vs. global) attributions for failure.

In a second study conducted by Mikulincer et al. (1991), failure was induced experimentally via unsolvable problems. Here, too, participants who reported a high need for structure and a low fear of invalidity attributed failure on the problems to more global causes than did other types of participants. Furthermore, failure impaired subsequent performance on a different task for participants high in need for structure but not for those low in need for structure. Finally, in their third experiment, Mikulincer et al. (1991) varied the need for structure experimentally. Specifically, this need was induced by leading participants to believe that the research examined their ability to create "firm beliefs." Fear of invalidity was induced by telling participants that the purpose of the research was to examine their ability to make "correct judgments" about their performance. It was found that participants exposed to failure feedback exhibited performance deficits on a subsequent, unrelated task in the need for structure condition but not in the fear of invalidity condition. These results were interpreted to mean that need for structure-closure induces a globalized belief about one's low abilities that may translate, in turn, into subsequent performance deficits.

### *Use of Trait Labels in Communication*

Whereas Mikulincer et al. (1991) referred to globality of beliefs about the self, a recent experiment by Boudreau, Baron, and Oliver (1992) pertained to the tendency to use global trait labels in descriptions of others. Specifically, Boudreau et al. (1992) found that an expectation to communicate impressions of a target to an expert (a clinical psychology graduate student) suppressed the proportion of traits used by college students in their person descriptions. By contrast, an expectation to communicate to a fifth grader increased the proportion of trait labels in such descriptions. Boudreau et al. interpreted these results in terms of an increased fear of invalidity (and hence lowered need for closure) when confrontation with an expert is expected and an increased need for structure-closure when a

confrontation with "inferiors" (presumably less capable of drawing definite conclusions about the target on their own) is expected.

### *Need for Closure and the Linguistic Intergroup Bias*

Maass and her colleagues demonstrated, in a series of studies (for a review, see Maass & Arcuri, 1992), that positive in-group and negative out-group behaviors are often described in relatively abstract terms, implying that such behaviors are associated with constant characteristics of the actor. By contrast, negative in-group and positive out-group behaviors tend to be described in relatively concrete terms, restricting the behaviors to the specific situation and affording little generalization. These phenomena have been collectively referred to as the linguistic intergroup bias. Research aimed at uncovering the underlying mechanism of the linguistic intergroup bias has obtained evidence for expectancy-based as well as motivational explanations. According to the expectancy explanation, the general stereotype of the in-group is positive and that of the out-group is negative. Thus, positive behaviors of the in-group and negative behaviors of the out-group are consistent with the abstract stereotype and, hence, could be assimilated thereto. By contrast, negative in-group and positive out-group behaviors are inconsistent with the corresponding stereotypes. Instead, they tend to be viewed as unique and described in their own, concrete terms.

The motivational explanation has been phrased in terms of in-group protection. As Maass and Arcuri (in press) put it:

Assuming that concrete descriptions dissociate the actor from the act, whereas abstract descriptions imply that the behavior reflects a stable and enduring property of the actor, one may argue that the linguistic intergroup bias helps to portray the ingroup in a favorable light while derogating the outgroup. (p. 29)

According to the present analysis, the need for closure may constitute another motivational factor with consequences for the linguistic abstraction level at which in-group and out-group behaviors are described. Of even greater interest, those consequences may constitute a joint function of strivings for transsituational consistency and consensus that the permanence tendency based on need for closure may foster. As noted earlier, strivings for transsituational consistency should increase the abstraction level of linguistic descriptions. This tendency should apply across the board (i.e., for positive and negative behaviors of in-groups as well as out-groups). On the other hand, the permanence tendency should also enhance the striving for in-group consensus and lend the in-group particular attractiveness as a source of motivational gratification (i.e., of consensus strivings). This may increase the motivation for in-group protectiveness.

Consider how inclinations toward abstraction and in-group protectiveness may interact. With respect to positive in-group behaviors and negative out-group behaviors, those inclinations should work in concert and converge on the same outcome: enhanced abstraction level of the linguistic descriptions. However, in the case of negative in-group behaviors and positive out-group behaviors, those inclinations should clash: The in-group protectiveness tendency should effect a reduced abstraction level, whereas the abstraction tendency should effect an increased abstraction level. In short, it is possible to predict that

individuals with a high (vs. low) need for closure will adopt a higher level of linguistic abstraction when describing positive behaviors of in-group members and negative behaviors of out-group members. The differences due to need for closure should be reduced if not completely eliminated for negative behaviors of in-group members and positive behaviors of out-group members. These notions were examined in a recent study by Webster, Kruglanski, and Pattison (1995, Study 1).

In this research, the in-group versus out-group status of a given person was operationally defined in terms of a controversial issue, endorsement of the pro-choice or pro-life stand on abortion. At the beginning of the semester, students in an introductory psychology course at the University of Florida filled out, as part of a "mass testing" procedure, several personality measures, including the Need for Closure Scale (Webster & Kruglanski, 1994). Individuals with scores in the upper 25% of the distribution were labeled the high need for closure group, and those in the lower 25% of the distribution were labeled the low need for closure group.

The experimental sessions commenced several weeks later. The study was introduced as an investigation of impression formation. Participants were asked to fill out a questionnaire in which they provided general information about their attitudes on various issues. Embedded in this questionnaire was an item concerning the respondent's stand on abortion ("I consider myself pro-choice/pro-life"). In addition, participants were asked to provide, to the best of their ability, transcripts of two conversations during which they persuaded another person of something. This information, in a condensed form, was presumably to be handed to another participant as a basis for impression formation about the information provider.

The participant also was asked to form an impression of another target (called Pat) on the basis of similar materials. The two conversations Pat had allegedly provided were used to manipulate the valence of the target's behavior. A positive behavior referred to an instance in which Pat selflessly persuaded a peer to accept monetary assistance, and a negative behavior referred to an instance in which Pat persuaded a friend to cheat. Participants also learned of Pat's stance on the pro-choice-pro-life issue. After reviewing the information, participants were asked to describe, in their own words, Pat's behavior relevant to the two conversations. This constituted the main dependent variable of the research.

The design of the experiment was a  $2 \times 2 \times 2$  factorial; dispositional need for closure (high vs. low) and target's group status (in-group vs. out-group) were between-subjects variables, and target behavior (positive vs. negative) was a within-subject variable. Participants' descriptions of Pat's behaviors were analyzed via a method developed by Semin and Fiedler (1988) in which a distinction is drawn among four levels of abstraction in interpersonal terms. The most concrete terms are descriptive action verbs (e.g., "A hits B") providing objective descriptions of specific, observable events. Next in level of abstraction are interpretive action verbs that refer to larger classes of behavior (e.g., "A hurts B"), although they clearly refer to a specific behavioral instance. Even more abstract are state verbs (e.g., "A hates B") depicting enduring psychological states that apply beyond specific situations, even though they maintain a reference to a specific person (B in this case). Finally, the most abstract

terms are adjectives (e.g., "A is aggressive") in that they generalize beyond a specific situation, object, or behavior.

For each phrase in the participant's descriptions, language abstraction was coded by two raters (the interrater agreement level was .89). The abstraction score was computed by a simple monotonic scheme involving the numbers 1, 2, 3, and 4 to weigh the frequency of the four respective linguistic categories. Thus, descriptive action verbs were given the weight of 1; interpretive action verbs, 2; state verbs, 3; and adjectives, 4. The resulting score was akin to an ordinal scale indicating the degree of abstractness involved in language use.

Appropriate manipulation checks indicated that participants high versus low in the dispositional need for closure exhibited the expected differences on our state-like indicators of this motivation. Thus, those high in the dispositional need for closure expressed greater confidence in their impressions of Pat than those low in the dispositional need for closure; also, they reported that forming an impression of Pat required less thought and that the impression formation task was easier. A composite index of these statelike manifestations of the need for closure yielded the expected effect of our individual-differences measure of this motivation ( $p < .01$ ). In other words, high scorers on the Need for Closure Scale manifested, in the specific experimental situation, a response pattern assumed to be indicative of an "acute" need for closure state. The in-group-out-group manipulation also appeared to work; participants perceived the in-group target as more similar to themselves than the out-group target ( $p < .04$ ). The critical abstraction data are displayed in Table 3. An analysis of variance performed on these results yielded a significant main effect of the need for closure variable ( $p < .01$ ) qualified by a significant ( $p < .05$ ) three-way interaction among need for closure, target's group status, and behavior positivity.

Specifically, participants high (vs. low) in need for closure generally adapted a higher abstraction level ( $p < .0001$ ) in their descriptions. However, as predicted, this difference was significant only for positive behaviors of the in-group member ( $p < .05$ ) and negative behaviors of the out-group member ( $p < .05$ ). The difference was much reduced and nonsignificant for negative behaviors of the in-group member and positive behaviors of the out-group member.

Table 3  
*Language Abstractness as a Function of Need for Closure, In-Group-Out-Group Status, and Behavior Valence*

	Behavior valence			
	Positive		Negative	
	In-group	Out-group	In-group	Out-group
Need for closure				
High	3.46 <sub>a</sub>	2.37 <sub>b</sub>	2.72 <sub>b</sub>	3.49 <sub>a</sub>
Low	2.49 <sub>b</sub>	2.04 <sub>b</sub>	2.13 <sub>b</sub>	2.51 <sub>b</sub>

*Note.* The higher the figure, the higher the level of abstraction. Means with different subscripts differ significantly at  $p < .05$ . Adapted from *Motivated Language Use in Intergroup Contexts: Need for Closure Effects on the Linguistic Intergroup Bias*, by D. M. Webster, A. W. Kruglanski, and D. S. Pattison, 1995, Experiment 1, p. 32, unpublished manuscript, University of Florida.

The foregoing data pattern is consistent with our hypothesis that the permanence tendency induced by a heightened need for closure produces both a general inclination toward linguistic abstraction and a more specific inclination toward in-group protectionism. Those inclinations may work in concert for positive behaviors of the in-group and negative behaviors of the out-group, leading to a pronounced difference in the abstraction level adopted by participants high versus low in need for closure. The same inclinations may be in conflict, however, for negative behaviors of the in-group and positive behaviors of the out-group, reducing the difference in abstraction level adopted by participants high versus low in need for closure with respect to those behavioral categories.

In an additional experiment, we (Webster, Kruglanski, & Pattison, 1995, Study 2) used an identical task and procedure but operationalized need for closure via ambient noise. Appropriate manipulation checks indeed attested that noise heightened the need for closure in the expected ways. Participants in the noisy condition, in comparison with those in the quiet condition, reported higher confidence in their judgments and reported that the task required less thought and was easier. A composite index based on those items yielded a significant main effect of noise ( $p < .05$ ). The target's in-group versus out-group status also produced the expected differences in that participants perceived the out-group target as less similar to themselves than the in-group target ( $p < .01$ ). The linguistic abstraction data are summarized in Table 4.

As predicted, participants under noise adopted a generally higher abstraction level in their descriptions than participants in the quiet environment. This difference was significant only for positive behaviors of the in-group member and negative behaviors of the out-group member ( $p < .01$  in both cases). The abstraction-level difference proved nonsignificant for negative behaviors of the in-group member and positive behaviors of the out-group member, however. These data closely replicated those of the previous study in which need for closure was operationalized as an individual-differences variable rather than manipulated via noise.

#### *Boundary Conditions of Urgency Versus Permanence Effects*

Research described thus far addressed the joint operation of the urgency and permanence tendencies (reflected in the seizing

and freezing phenomena) and the separate effects of the permanence tendency promoting strivings for consensus and consistency. It is of interest to consider now the separate effects of the urgency tendency and, more important perhaps, the boundary conditions separating its applicability domain from that of the permanence tendency. In other words, the question is, When are need for closure effects mediated by the urgency tendency, and when are they mediated by the permanence tendency? As noted earlier, we assume that a relevant boundary condition here is the moment of belief crystallization, that is, the juncture during which an opinion is solidified. Heightened need for closure during the precrystallization phase should intensify seizing: At that knowledge-formation stage, high need for closure signifies a discrepancy between actual and desired states (of lacking closure on the one hand and wanting it on the other). This state of affairs should potentiate urgent seizing geared to remove the discrepancy. After crystallization, however, a heightened need for closure should intensify freezing. At that stage, the need for closure is gratified, and hence there is no discrepancy between actual and desired states. The higher the need for closure, the more psychologically important such gratification and the stronger the tendency to perpetuate it or lend it permanence via freezing.

#### *Interactive Effects of Need for Closure and Initial Confidence on Social Information Seeking*

One way in which the precrystallization and postcrystallization periods may be differentiated from each other is in terms of judgmental confidence: Before crystallization, individuals' confidence in a judgment should be relatively low, whereas, after crystallization, it should be higher by comparison. Furthermore, seizing may be distinguished from freezing by the intensity and extent of the informational search. During the seizing phase, the individual may search for information rather energetically and voluminously. By contrast, during the freezing phase, she or he may be reluctant to consider new information and, if at all, do so sparingly and hesitantly.

Those notions were tested in two experiments by Kruglanski, Peri, and Zakai (1991). Participants were presented with five series of drawings. All series contained either two or four standard drawings on a given topic (a man, woman, or tree), each drawn by a different person, and a criterion drawing on a

Table 4  
*Linguistic Abstractness as a Function of Behavior Valence, Target Group Membership, and Environmental Noise*

Environment	Positive behavior						Negative behavior					
	In-group member			Out-group member			In-group member			Out-group member		
	Abstraction level	s	n	Abstraction level	s	n	Abstraction level	s	n	Abstraction level	s	n
Noisy	3.521 <sub>a</sub>	.743	16	2.654 <sub>b</sub>	.661	13	2.493 <sub>b</sub>	.940	16	3.526 <sub>a</sub>	.775	13
Quiet	2.700 <sub>b</sub>	.798	13	2.462 <sub>b</sub>	.794	15	2.322 <sub>b</sub>	.876	13	2.600 <sub>b</sub>	.784	15

Note. The higher the figure, the higher the level of linguistic abstraction. Means with different subscripts differ significantly at  $p < .05$ . s = linguistic abstraction index (adapted from Semin and Fiedler, 1988). Adapted from *Motivated Language Use in Intergroup Contexts: Need for Closure Effects on the Linguistic Intergroup Bias*, by D. M. Webster, A. W. Kruglanski, and D. S. Pattison, 1995, Experiment 2, p. 33, unpublished manuscript, University of Florida.



different topic (invariably a house) drawn by one of the individuals who had prepared the standard drawings. Participants' task was to identify, for each series, the particular standard drawing of the person responsible for the criterion drawing. The time allotted was 3 min. Participants stated their interim judgment after 1 min and, during the remaining 2 min, were allowed to engage in an information search concerning alleged other participants' responses. This was accomplished by having participants turn over some (or all) of the standard drawings, which bore on their backs the percentages of previous participants choosing them as the correct answers.

Initial confidence was manipulated via the number of choice alternatives presented to participants. In the high confidence condition, participants chose from among two standard drawings; in the low confidence condition, they chose from among four drawings. Appropriate checks verified that this confidence manipulation had the intended effect.

The two studies differed in how they manipulated the need for closure. Our pilot research suggested that the novel experimental task was somewhat confusing to participants, introducing a relatively high base level of the need for closure. Rather than attempting to further elevate it via experimental manipulations, we therefore decided to lower it instead in some conditions. In one study, we did so by providing participants with clear criteria for assessing the drawings' similarity (the drawing's size and location on the page, its linear quality, its degree of elaboration, and the presence-absence of a depth dimension). In the second study, we did so via a fear of invalidity induction whereby mistaken judgments were to be punished by a loss of points.

Two aspects of the information search were of interest: (a) the alacrity with which participants commenced it and (b) its overall extent, that is, the number of drawings participants turned over. If low confidence typifies the precrystallization phase and high confidence typifies the postcrystallization phase, and if, moreover, the need for closure produces seizing in the former phase and freezing in the latter, need for closure should exert opposite effects on the dependent variables at the two confidence levels. In the low confidence condition, high versus low need for closure should induce seizing manifest in a relatively hurried commencement of the informational search and its relatively ample extent. By contrast, in the high confidence condition, high versus low need for closure should induce freezing manifest via relatively retarded commencement and sparse extent of the informational search. As Table 5 indicates, that is exactly what happened. Thus, initial confidence may constitute a boundary condition separating the urgency tendency underlying seizing from the permanence tendency underlying freezing.

#### *Motivated Reactions to Persuasion in the Presence or Absence of Prior Information*

The dramatically disparate effects of need for closure on information processing in the precrystallization versus postcrystallization phases should have intriguing implications for the persuasion process: In the precrystallization phase, heightened need for closure may enhance individuals' tendency to accept persuasion, whereas, in the postcrystallization phase, it may enhance their tendency to resist persuasion. Specifically, the discrepancy under a heightened need for closure between actual

Table 5  
*Mean Numbers of Drawings Turned Over and Latency of Turning Over the First Drawing*

Need for closure	Confidence level			
	High		Low	
	Mean no. of drawings turned over	Latency of turning over first drawing	Mean no. of drawings turned over	Latency of turning over first drawing
Experiment 1				
High	2.62	65.11	3.60	39.79
Low	3.94	37.01	3.00	47.84
Experiment 2				
High	2.60	60.39	3.52	33.67
Low	4.37	19.47	2.82	49.01

*Note.* From "Interactive Effects of Need for Closure and Initial Confidence on Social Information Seeking," by A. W. Kruglanski, N. Peri, and D. Zakai, 1991, *Social Cognition*, 9, pp. 136 and 137. Copyright 1991 by Guilford Publications, Inc. Adapted with permission.

and desired states before crystallization should induce the tendency to urgently remove it. A persuasive communication offers a means of doing so; hence, it should be quickly accepted. By contrast, in the postcrystallization phase, an absence of discrepancy between the desire for closure and its possession should induce the tendency to maintain this pleasing state in relative permanence. This should induce a resistance to persuasion because it requires at least a temporary unfreezing of one's mind.

These notions were examined in the research by Kruglanski et al. (1993, Studies 2 and 3) referred to earlier. Dyads were formed consisting of a naive participant and a confederate. The experiment was portrayed as a psychological investigation of legal juries. A participant and a confederate were presented with the essentials of a legal case (a civil suit against an airline company by a lumber company). For half of the participants, the materials included a "legal analysis" affording the formation of a definite opinion favoring the defendant or the plaintiff. The remaining participants received no such analysis, and hence they lacked an informational base for a confident opinion.

The presence or absence of an opinion base was crossed orthogonally with need for closure, manipulated via environmental noise produced by a rackety computer printer. Participants read the case materials, recorded their opinion (or hunch) concerning the appropriate verdict, and confronted a confederate who argued for the opposite verdict. The results supported our theoretical analysis. In the absence of the legal analysis assumed to prevent the development of a confident opinion (representing the precrystallization phase), participants evinced greater persuadability under noise than under no noise. Specifically, they tended more to change their prediscussion verdicts and spent less time arguing with the confederate in the noisy versus the quiet condition. Precisely the opposite happened when participants were given the legal analysis affording a crystallized opinion. In this condition, participants under noise (vs. no noise) evinced less persuadability. They shifted less in their verdicts

and spent more time arguing with the confederate. The relevant data are summarized in Table 6.

This experiment was conceptually replicated with scores on the Need for Closure Scale as a way of operationalizing need for closure. The same data pattern was reproduced: Participants high (vs. low) in need for closure, as assessed by our scale, were more readily persuaded in instances in which absence of prior information presumably prevented them from crystallizing an opinion and were less readily persuaded in instances in which prior information made such crystallization possible (see Table 7).

### *The "Fight Rather Than Switch" Paradox*

Note that, in both of our studies, freezing on a prior opinion under a heightened need for closure led to considerable arguing with a different-minded person. Such a tendency to "fight rather than switch" under a heightened need for closure could be paradoxical and potentially dysfunctional from the individual's own perspective. For instance, an individual who craves closure so as not to expend energy on laborious information processing (e.g., under noise) ends up expending considerable energy, in fact, on heated argument. Apparently, then, even though the goal of closure may have originally evolved on the basis of rational (energy saving) considerations, once in place it may acquire functional autonomy from those incipient considerations and prompt activities that may, ironically, defeat them.

## General Discussion

### *Theoretical Convergence*

If knowledge construction constitutes a pervasive cognitive activity typically occurring in social contexts, an epistemic motivation of key relevance to such activity should have significant consequences for diverse aspects and domains of social cognition. We have outlined a conceptual framework in which the need for (nonspecific) cognitive closure is identified as one such epistemic motivation and reviewed empirical evidence converging on a broad range of social-cognitive phenomena affected by that need.

Table 6  
*Mean Prediscussion to Postdiscussion Verdict Shifts and Time Spent in Discussion as a Function of Environmental Noise and Informational Base*

Informational base	Noise		No noise	
	Verdict shift	Time spent in discussion (min)	Verdict shift	Time spent in discussion (min)
Present	1.48	6.99	3.04	6.25
Absent	4.64	3.89	3.23	5.67

*Note.* The higher the figures, the greater the shifts from initial to final verdict. Adapted from "Motivated Resistance and Openness to Persuasion in the Presence or Absence of Prior Information," by A. W. Kruglanski, D. M. Webster, and A. Klem, 1993, *Journal of Personality and Social Psychology*, 65, p. 866. Copyright 1993 by the American Psychological Association.

Table 7  
*Mean Prediscussion to Postdiscussion Verdict Shifts and Time Spent in Discussion as a Function of Dispositional Need for Closure and Informational Base*

Informational base	Dispositional need for closure			
	High		Low	
	Verdict shift	Time spent in discussion (min)	Verdict shift	Time spent in discussion (min)
Present	1.50	7.32	3.46	5.60
Absent	4.10	4.20	2.30	6.47

*Note.* The higher the figures, the greater the shifts from initial to final verdict. Adapted from "Motivated Resistance and Openness to Persuasion in the Presence or Absence of Prior Information," by A. W. Kruglanski, D. M. Webster, and A. Klem, 1993, *Journal of Personality and Social Psychology*, 65, p. 870. Copyright 1993 by the American Psychological Association.

We have defined need for closure as a desire for definite knowledge on some issue and the eschewal of confusion and ambiguity. It is assumed to represent a relatively stable dimension of individual differences as well as a situationally inducible state influenced by perceived benefits of closure (or costs of lacking it). Finally, need for closure is presumed to exert its effects via two general tendencies: the urgency tendency, reflecting the inclination to attain closure as quickly as possible, and the permanence tendency, reflecting the tendency to maintain it for as long as possible.

Jointly, the urgency and permanence tendencies may produce the inclinations to seize and then freeze on early judgmental cues. A seizing and freezing sequence under heightened need for closure may (a) reduce the extent of information processing and hypothesis generation (Mayseless & Kruglanski, 1987); (b) elevate judgmental confidence (e.g., Kruglanski & Webster, 1991; Kruglanski et al., 1993; Mayseless & Kruglanski, 1987; Webster & Kruglanski, 1994); (c) focus the information search on prototypical rather than diagnostic evidence (Kruglanski & Mayseless, 1988); (d) effect the use of early cues giving rise to impressionary primacy, anchoring effects, or stereotypic judgments (Freund et al., 1985; Heaton & Kruglanski, 1991; Jamieson & Zanna, 1989; Kruglanski & Freund, 1983; Webster & Kruglanski, 1994); (e) induce the tendency to exhibit correspondence or overattribution biases (Webster, 1993); and (f) increase the tendency to assimilate judgments to primed constructs (Ford & Kruglanski, 1995; Thompson et al., 1994).

Beyond the promotion of epistemic freezing, the permanence tendency under a heightened need for closure may effect a preference for consensual knowledge unlikely to be challenged by significant others and a preference for consistent knowledge generalizable across specific situations. The greater predilection for consensus under high (vs. low) need for closure has been shown to be manifest in (a) an increased preference for a persuadable partner by participants who are high (vs. low) in need for closure and who have a prior opinion base, (b) an increased preference for a persuasive partner by participants who are high (vs. low) in need for closure and who do not have a prior opin-

ion base (Kruglanski, Webster, & Klem, 1993), (c) rejection of opinion deviates, and (d) countenance accorded to salient conformists (Kruglanski & Webster, 1991).

The greater predilection for transsituational consistency in knowledge exhibited by participants under high (vs. low) need for closure has been shown to be manifest in the tendency to (a) ascribe failures to global (vs. specific) self-characteristics (Mikulincer et al., 1991), (b) communicate social knowledge using abstract trait labels (Boudreau et al., 1992), and (c) use abstract linguistic descriptions (Webster, Kruglanski, & Pattison, 1995) in reference to positive in-group behaviors and negative out-group behaviors, consistent with the linguistic intergroup bias (Maass & Arcuri, 1992). Also as predicted, these differences in abstraction were largely absent in reference to positive out-group and negative in-group behaviors. In accordance with the theory, the quest for in-group consensus due to the permanence tendency may inspire stronger in-group favoritism and protectionism under a heightened need for closure. This may instill the inclination to concretize (and hence situationally restrict) negative in-group behaviors and positive out-group behaviors, contrary to the general preference for abstraction associated with permanence strivings under a heightened need for closure.

A significant boundary condition separating the effects of seizing from those of freezing has been hypothesized to reside at the point of belief crystallization. Before that juncture, need for closure is assumed to augment seizing; subsequent to that juncture, it is assumed to enhance freezing. Consistent with these notions, participants under a high (vs. low) need for closure have been shown to exhibit shorter latencies of information seeking and more ample information seeking when their initial confidence in a hypothesis is low (assumed to represent a precrystallization seizing) and longer latencies and sparser information seeking when their initial confidence is high (assumed to represent postcrystallization freezing; Kruglanski et al., 1991). Similarly, participants under a high need for closure have been shown to be more accepting of persuasion in conditions preventing the formation of a confident opinion (representing precrystallization seizing) and more resistant to persuasion in conditions affording the formation of an opinion (representing postcrystallization freezing; Kruglanski et al., 1993).

### *Methodological Convergence*

If, as the present theory maintains, need for closure is generally aroused by the perceived benefits of closure or costs of lacking closure, the same effects should obtain across a broad variety of conditions, the only common element of which relates to such benefits or costs. The data reviewed earlier provide ample support for this supposition. Specifically, similar, theoretically predicted effects emerged under such seemingly disparate conditions as those created by time pressure, ambient noise, mental fatigue, a request (vs. no request) for judgment, and exposure to a dull activity. All such conditions may render closure beneficial, and hence they should all induce the motivation to attain it.

Furthermore, many of these effects were replicated by means of an individual-differences measure of need for closure (Webster & Kruglanski, 1994), consistent with the notion that need for closure both is situationally malleable and represents a

stable personality trait. Finally, whenever they were used, manipulations designed to lower the need for closure or arouse the need to avoid closure (specifically, accountability, evaluation apprehension, or accuracy instructions) had the exact opposite effects to instructions designed to elevate the need for closure (e.g., time pressure and noise). This supports the monotonicity assumption mentioned earlier, whereby motivational effects are directionally similar across different loci on the need for closure continuum. These results also support the very conception of a continuum as such in that manipulations assumed to heighten the need for closure (noise, mental fatigue, time pressure, and boredom) consistently produced the opposite effects to those assumed to heighten the need to avoid closure (evaluation apprehension, accuracy, and accountability instructions). In summary, then, the multiple operationalism adopted in the research reviewed here supports the theoretical assumptions concerning the nature of the need for closure and its instigating conditions.

### *Need for Closure as a Scientific Construct: Its Reality Status, Evidential Support, and Heuristic Value*

Any introduction of a novel scientific construct demands a careful critical scrutiny: Is it sufficiently distinct from previous notions? Is it "real"? Is evidence for it open to plausible alternative interpretations? What advantages does it offer anyway? Does it afford new insights (i.e., Does it have a heuristic value?)? Does it point to previously neglected commonalities (i.e., Does it have an integrative value?)? The distinctiveness issue has been confronted at an earlier juncture; we have concluded that, as a concept, need for closure contains several unique features that set it apart from previous formulations. It is distinctly motivational, content free, and, by and large, more general than its predecessors. The issues of reality, alternative interpretations, and heuristic and integrative values are considered next.

### *Is It Real?*

The need for closure variable admittedly constitutes a "hypothetical construct" knowable only indirectly via its effects. To state that a concept is hypothetical does not mean, however, that it is unreal. As Kurt Lewin (1947) remarked in reference to the "group" notion, a scientific construct is real if its effects are real. Moreover, hypothetical constructs are the rule in science rather than the exception: *Schema*, *associative network*, *dissonance*, and *electron*, among others, are examples of hypothetical constructs whose utility may not be doubted. Commenting on this issue (in the heyday of positivism in psychology), MacCorquodale and Meehl (1948, p. 105) noted that if one objected to constructs "on the ground that they refer to unobservables or are 'hypothetical' . . . a large and useful amount of modern science would have to be abandoned."

### *Alternative Interpretations: The Issue of Overinclusiveness*

A different question altogether is whether the real (i.e., empirically observed) effects obtained in the research described

here are ascribable to the need for closure or readily explicable by competing alternative interpretations. In this connection, the very breadth of the need for closure construct raises the specter of overinclusiveness. Because, by assumption, need for closure is arousable by a wide range of seemingly unrelated conditions (representing the heterogeneous benefits of closure or costs of lacking it), one may wonder whether it does not constitute, in fact, a post hoc explanation invoked to account for any degradation of cognitive performance. A quick reflection suggests that this is not the case. Thus, it is easy to think of conditions that reduce the extent of information processing (e.g., lack of expertise), affect the magnitude of primacy effects (e.g., manipulating attention to early vs. late appearing information; Anderson, 1965), or affect the recall of stimulus information before the forming of an impression (Anderson & Hubert, 1963) yet seem largely unrelated to the need for closure construct. Broad though it may be, this construct is apparently not that all encompassing.

### *Superfluity*

A question may be raised as to whether the putative effects of the need for closure may not be explicable, alternatively, by the various situational demands used to operationalize it. Such a state of affairs would render the construct redundant and superfluous. For instance, if it seems "intuitively obvious" that time pressure and fatigue augment the use of simplistic cues, little would be gained by additionally invoking the need for closure in this context. A moment's reflection, however, suggests that need for closure theory has definite advantages over the mere assertion of an empirical relation between situational demands and cue-utilization phenomena. Even if that relation, as such, was intuitively obvious, its underlying mechanisms might not be. Two alternative hypotheses, involving, respectively, cognitive capacity and motivation, immediately spring to mind in this connection. The first hypothesis states that situational demands may deplete individuals' cognitive resources and impel them to resort to simple cues. The second hypothesis suggests that demands may render the processing of information costly, motivating individuals to simplify the activity and hence save energy and effort. The present theory highlights the latter possibility in particular, and the relationship between that possibility and the depletion of capacity alternative is addressed next.

### *Motivation Versus Capacity Depletion*

To understand how situational demands introduced in our experiments may have affected participants' relative<sup>1</sup> cognitive capacity and information-processing motivation, one must consider possible ways in which these constructs interrelate. We assume that, as far as formation of judgments is concerned, relative capacity and motivation are multiplicatively interrelated. That is, at least some degrees of capacity and motivation are required for judgmental activity to occur. Setting either at zero will undermine it, and no amount of increment in the remaining one may compensate for the deficit. Above the zero level, however, the two variables may exhibit a compensatory relation. Reduction in capacity may be offset by an increment in motivation, and vice versa. According to this model, our situational-

demand manipulations did not exhaust capacity completely (or set it to zero level). Specifically, our accountability and accuracy instructions clearly and consistently attenuated the effects of such situational demands as time pressure, mental fatigue, and noise (e.g., Kruglanski & Freund, 1983; Webster, Richter, & Kruglanski, 1995). It appears, then, that when sufficiently motivated, participants are perfectly capable of overcoming the effects of various situational constraints on information processing, at least at the magnitudes at which these constraints are typically manipulated in social psychology experiments.

Note that the multiplicative relation between capacity and motivation allows for two separate possibilities: one in which the two are independent of each other and one in which they are causally related. According to the independence assumption, capacity reduction as such (e.g., resulting from organismic energy depletion or situational demands) has no motivational consequences whatsoever, even though it may be compensated for by motivational increments. This is analogous to the case in which deflation of bicycle tires may be compensated for by enhanced pedaling effort even though it does not cause it.

According to the causality assumption, on the other hand, depletion of relative cognitive capacity does induce a motivation to expend less effort on the requisite judgment. This motivation translates into the need for cognitive closure (Kruglanski, in press-b), that is, the desire for confidence and clarity, obviating the need for further processing. Our analysis assumes, in fact, that the various effects of our situational-demand manipulations, for example, were due not to capacity reduction as such but to a motivational state it may have engendered. What evidence is there for this contention?

Note that the various situational demands introduced in the present research had a variety of motivational consequences. Specifically, they systematically affected our research participants' preferences and affective reactions to social stimuli. As mentioned already, in research by Kruglanski et al. (1993), participants with firm opinions on a topic, when placed in a noisy environment, expressed a stronger preference for nonpersuasive, nondominant discussion partners unlikely to challenge their preexisting closure. However, participants lacking a firm opinion expressed a greater preference under noise (vs. no noise) for persuasive and self-assured partners presumably capable of supplying quick closure.

Heightened need for closure should lead to a more negative evaluation of opinion deviates whose dissenting views threaten to undermine closure. Indeed, in research conducted by Kruglanski and Webster (1991), group members under time pressure (vs. no pressure) or environmental noise (vs. no noise) tended more to reject the opinion deviates and extol the conformists (or "opinion leaders") whose actions were seen to facilitate consensus.

<sup>1</sup> The notion of relative cognitive capacity intends to capture the functional commonality shared by situational demand manipulations (time pressure and noise) and momentary decreases in the perceiver's mental powers (e.g., resulting from fatigue or alcoholic intoxication). Both types of manipulation represent a reduction of cognitive capacity in relation to task requirements: Situational demands induce it by increasing task requirements, and mental power decreases, by lowering the perceiver's capabilities.

Note that, as such, the capacity-restriction concept seems incapable of explaining such patterns of interpersonal preferences or evaluations. The notion of cognitive capacity is devoid of specific implications in regard to affective, evaluative, or preferential reactions. On the other hand, a motivational state readily implies preferences and affective expressions (or evaluations) contingent on whether a given state of affairs is perceived to advance the motivational end or undermine it. Thus, the clear motivational effects of situational demands are inconsistent with the independence assumption whereby those demands exert purely cognitive effects (albeit capable of compensation by motivational increments).

Similarly inconsistent with the independence assumption is the pervasive finding that individuals exposed to situational demands exhibit higher judgmental confidence than their nonexposed counterparts. The independence assumption seems to require just the contrary, specifically that a reduction of capacity without an independent compensatory increase in motivation should effect a decline rather than a rise in confidence. Yet one finds, time and time again, that research participants' confidence is at its highest, in fact, when their relative cognitive capacity is reduced (e.g., by noise or fatigue) without introduction of a compensatory motivation (e.g., Kruglanski et al., 1993; Webster, 1993; Webster, Kruglanski, & Pattison, 1995).

Admittedly, situational demands may impair cognitive capacity and induce a motivational state without the two being necessarily related. Thus, it is possible, in principle, that the observed cognitive or judgmental effects of our various manipulations stemmed from capacity restrictions rather than constituting the indirect derivatives of the induced motivation. Some evidence against this possibility was obtained in recent studies (Kruglanski et al., 1993; Webster, 1993) in which the effects of specific situational demands (e.g., noise) were rendered nonsignificant once the motivation for closure was statistically controlled (Baron & Kenny, 1986), suggesting that those effects were in fact mediated by (rather than independent of) the need for closure. These findings speak most directly in support of the cause-effect model of the capacity-motivation relation and against the independence alternative.

Finally, recall that most effects of the situational demands were replicated by means of our individual-differences measure of the need for closure. Most of the items in that scale (26 of 42) have clear motivational flavor (e.g., terms such as "I like," "enjoy," "hate," "dislike," or "prefer"). It is highly unlikely that scores on this measure are readily susceptible to an alternative interpretation in terms of capacity restrictions. Thus, all things considered, it appears that the need for closure theory offers the most comprehensive and parsimonious account of the entire set of present data, including the effects of situational demands and information-processing constraints manipulated in some of our studies.

### *Heuristic Value*

The foregoing discussion suggests that even for relatively straightforward effects such as those of situational demands on the use of simple cues, need for closure theory yields valuable, novel insights. In addition, however, this theory affords the identification of phenomena that, far from appearing obvious or straightforward, may seem complex, surprising, or even paradoxical. For instance, it suggests that the same conditions that in-

crease openness to persuasion in some circumstances may decrease it in other circumstances (Kruglanski et al., 1993), that the same conditions that augment the search for information in some contexts retard it in different contexts (Kruglanski et al., 1991), and that the same situational stresses that foster disapproval and rejection of a deviate may elicit approbation and acceptance of a conformist (Kruglanski & Webster, 1991). Moreover, need for closure theory implies complex linkages between situational demands, for example, and level of linguistic abstraction (Webster, Kruglanski, & Pattison, 1995) rather than anticipated by known alternative perspectives. Also, it identifies intriguing paradoxes like those of unfounded confidence (higher confidence level despite more restricted information processing) and energy-consuming "fighting rather than switching," despite conditions favoring energy conservation. It is highly unlikely that these phenomena would be accessed through extant alternative formulations, attesting to the considerable heuristic value of the present analysis.

### *Integrative Value*

The present theory and research highlight the considerable integrative advantages for social psychology of focusing on the fundamental epistemic process whereby judgments or opinions are formed (Kruglanski, 1980, 1989, 1990a). Numerous social psychological phenomena appear to be mediated by such a process in which the need for cognitive closure plays a pivotal part. Indeed, the work reviewed here attests to the relevance of need for closure to such diverse phenomena as primacy effects in impression formation, correspondence biases in causal attribution, stereotyping, groups' reactions to deviates, and the use of language in intergroup contexts.

The need for closure should be just as relevant to numerous other phenomena, unexamined as yet from the present perspective. To mention a few prominent examples, need for closure should enhance the bothersomeness of cognitive inconsistency (that undermines cognitive closure) and hence elevate the magnitude of cognitive dissonance (Festinger, 1957) or balance strivings (Heider, 1958; for a discussion, see Kruglanski & Klar, 1987). Similarly, need for closure should augment the tendency of beliefs to persevere (Ross, Lepper, & Hubbard, 1975), increase the confirmation bias in hypothesis testing (Klayman & Ha, 1987), and enhance the false consensus effect (Ross, Greene, & House, 1977) and the tendency toward self-verification (Swann & Read, 1981). These apparent links among previously unconnected phenomena offer a synthesis of a fragmented social psychological domain (cf. Vallacher & Nowak, in press) under the aegis of a unified epistemic paradigm.

In conclusion, the theory and research described here suggest that need for cognitive closure represents a useful construct of wide applicability to social psychology. Because of the ubiquitous circumstances of its arousal and its widely ramifying consequences, its continued study promises considerable new insights of both theoretical and real-world significance.

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