Part I
Theories and Concepts

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The Need for Certainty as a Psychological Nexus for Individuals and Society

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Throughout the history of psychology, two important principles have inextricably linked a quest for knowledge formation with the formation of social groups. The first major principle states that *individuals' understandings of the world are held as true to the extent that they can be affirmed by some social group*. Leon Festinger (1950, pp. 272–273), one of social psychology's major leaders, argued that "an opinion, a belief, an attitude is perceived as 'correct,' 'valid,' and 'proper' to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes." When a subjectively held belief is socially shared, it attains the status of objectivity. In other words, "once a value is standardized and becomes common property of the group . . . it acquires objective reality" (Sherif, 1936, p. 124).

A major aspect of people's social nature is their reliance on the opinions of valued others, members of significant groups of which they are members and "in the absence of social verification, experience is transitory, random, and ephemeral. . ." (Hardin & Higgins, 1996, p. 28). Thus, social psychologists agree that only knowledge that is socially shared (by individuals whose opinions one respects) is treated as reliable, valid, and generalizable (Hardin & Higgins). Consequently, "because persons construct their beliefs in concert with their fellow members, individual knowledge is inevitably grounded in a shared reality, and a desire for shared reality is tantamount to the quest for a firm individual knowledge" (Kruglanski, Pierro, Mannetti, & De Grada, 2006, p. 85). Consistent with this analysis, it has been found that individuals deprived of social contact are not able to develop intelligent thought (Cooley, 1902). Conversely, major philosophical and scientific figures are able to thrive because of their rich involvement in

social groups. In this vein, Collins (1998) reviewed the contributions of numerous major scholars in philosophy and the sciences and found that most new ideas were spawned by individuals deeply rooted in philosophical movements and with close interpersonal ties with others aligned with the movement.

The second major principle declares that *groups can only exist to the extent that their members have a shared understanding of the world*. Many authors have defined groups according to the commonality of the beliefs among members (Bar-Tal, 1990; Bar-Tal, 2000; Levine & Higgins, 2001). These beliefs pertain to shared norms (Newcomb, 1951), and shared goals (Deutsch, 1968; Cartwright & Zander, 1968; Merton, 1957), determining individuals' behavior. Norms cannot be developed, and group goals cannot be set or pursued, without common understanding and generally agreed upon values. Admittedly, groups vary in the extent to which they share these features. This variability defines the "groupness" of a given collectivity, or its degree of "entitativity" (Lickel et al., 2000). Specifically, the greater the consensus among group members, the greater the group's entitativity.

As groups provide a sense of shared reality to their members, they serve the function of reducing these persons' uncertainty. Accordingly, the greater members' need for certain knowledge about the world, the greater should be their attraction to groups with a firm sense of shared reality. Such epistemic need for firm knowledge has been termed the *need for cognitive closure* (Kruglanski, 1989; Kruglanski, 2004). One may expect, therefore, that when individuals' need for cognitive closure is high, groups that are able to provide coherence, consistency, order, and predictability to belief systems acquire particular appeal for those persons. Below we describe the need for closure construct in some detail, review the evidence relating the need for closure to a syndrome of "group centrism," (Kruglanski et al., 2006), and apply this framework to individuals' tendency to espouse extremist ideologies.

The Need for Cognitive Closure and Group Centrism

The need for closure is defined as the desire for a quick and firm answer to a question and the aversion toward ambiguity or uncertainty (Kruglanski & Webster, 1996). Ample evidence exists that a heightened need for closure leads to a "seizing" and "freezing" on available information and on judgments that such information implies (Kruglanski, Webster, & Klem, 1993; Kruglanski & Freund, 1983). Possible levels of the need for closure range along a continuum, with a strong need for closure at one end and a strong need to avoid closure at the other. Thus, a person may desire closure strongly, mildly, or not at all, or even want to avoid it. The need for closure is assumed to exert the same psychological effects irrespective of whether it is measured as an individual difference variable or is aroused situationally (Webster & Kruglanski, 1994). In support of this

conceptualization, a large body of research has found a convergent pattern of effects on a wide range of variables regardless of whether need for closure was operationalized situationally or dispositionally (for a review, see Kruglanski, 2004).

As already mentioned, a large body of evidence has accumulated in support of the idea that a heightened need for closure gives rise to a syndrome of "group centrism" (Kruglanski et al., 2006). Because groups serve as epistemic reality providers, and individuals high on the need for closure crave epistemic certainty, a heightened need for closure lends appeal to groups adept at providing a firmly anchored sense of shared reality to their members. Such groups are characterized by an homogeneity of opinions, a decision-making structure that affords a quick and unambiguous closure, and the rejection of anyone who could potentially disrupt the group's shared reality and interfere with the process of forging such reality quickly and efficiently. Evidence for these assertions is reviewed below.

Pressures to Opinion Uniformity

If individuals under a high need for closure desire a sense of shared reality with their fellow group members, they may exert efforts to bring it about by exerting pressures on those persons to the end of forging opinion uniformity in their group. Empirical evidence suggests that this is so in fact. Thus, in a dyadic interaction study, individuals in a high (vs. low) need for closure condition reported a greater desire for agreement with their interaction partners (Kruglanski et al., 1993). Two subsequent studies extended these results by investigating conformity pressures in groups looking both at group members' own subjective experience of the group process and ratings of such process by independent observers (De Grada, Kruglanski, Mannetti, & Pierro, 1999). Participants in groups engaged in a decision-making task. Each group was composed of four members, each playing the role of a corporate manager, with the assigned goal of determining the allocation of a cash reward for performance by employees within the company. Each group member, or manager, was responsible for representing the candidate nominated from her or his department. In their first study, De Grada and colleagues found that participants operating under a situationally heightened need for closure (by time pressure) were more task focused and less attentive to socioemotional cues during the group interaction than individuals under a lower need for closure. In a second study, groups composed of individuals dispositionally high on the need for closure reported exerting and experiencing greater conformity pressures than groups composed of individuals low on the need for closure. These perceptions were confirmed by the perceptions of independent observers who reported the same pattern. Other relevant studies yielding similar implications found that groups under a heightened need for closure tended to

reach greater consensus (Pierro, De Grada, & Livi, 2004) and devoted less time to discussion before reaching a decision (Kelly & McGrath, 1985).

Autocratic Decision-Making Structure

In the research reported above by De Grada and colleagues (1996), preliminary support was obtained for the notion that high need for closure would be associated with a preference for an autocratic group structure. Specifically, it was found that groups high on the need for closure exhibited an asymmetry in the extent to which group members were able to maintain "floor control" of group discussion, and to deflect attempts to wrest the center stage once they had begun speaking.

In a study by Pierro, Mannetti, DeGrada, Livi, & Kruglanski (2003) groups composed of individuals high on the need for closure exhibited greater asymmetry in the extent to which members were able to both gain and maintain "floor control." Furthermore, in the high need for closure groups, individuals who controlled the group discussion were aware of their dominance and perceived themselves to be more influential than their counterparts. The asymmetric dominance of members in high (vs. low) need for closure groups was corroborated by the perceptions of independent observers.

A second study in the Pierro et al. (2003) series manipulated members' need for closure via a time pressure induction. Of particular interest here was the number of communications given and received by each of the four group members. It was found that groups in the high (vs. low) need for closure condition demonstrated an asymmetry in the number of communicative acts emitted and received by the different members, and the number of communications received was positively correlated with the number of communications emitted. As in Study 1, the more central group members were perceived to be more influential in the group according to both personal reports and ratings by independent observers.

Intolerance of Diversity and Rejection of Opinion Deviants

When need for closure is high, the desire to "freeze" on beliefs and to remain firm in one's knowledge makes any statement questioning the established order potentially unsettling. Thus, in groups under high need for closure opinion deviance should lead to a negative perception of the communicator. To investigate these notions, Kruglanski and Webster (1991) carried out several experiments. In the first experiment, children were presented with two options for the location of a future camping retreat. The children overwhelmingly preferred one of the locations, establishing a group opinion at the outset of the study. The researchers then selected a group member to make an appeal to the other members of the naturally occurring groups. The communicator was trained to present an

appeal for one of the two camping sites (the camping site to be pitched was determined by random assignment).

When the deviant opinion was expressed early on in the discussion, at a time when group members' need for closure was likely to be low, the opinion deviant was evaluated quite positively; as positively as other group members. However, when the same deviant opinion was expressed toward the end of the discussion period where group members were under time pressure and their need for closure was likely to be high, the opinion deviant was substantially derogated and evaluatively downgraded. Deviant opinions expressed without time pressure did not lead to any changes in liking for the communicator.

Kruglanski and Webster (1991) conducted a second study using college students as participants, and had groups of four students attempt to reach consensus on the issue of drug testing among athletes. Again, confederates were placed in the group with instructions to present either a conformist or a deviant position (all subjects had been preselected to be in favor of drug testing). When the groups deliberated in the presence of a noisy computer printer, assumed to enhance the need for closure, a deviant group member was viewed less favorably than in the other conditions. The noise had no influence on the perceptions of the conformist presenter. Two additional studies using similar procedures replicated this pattern of results. The fourth study in this sequence was different in one way. Rather than a peer group member presenting the conformist or the deviant opinion, a group leader played this role. In this study, unlike the three other studies, the conformist was viewed more positively in the noisy condition than in the quiet condition. Presumably, the heightened salience of this person's role in the group process made conformity especially valued in times of high need for closure.

Deviant opinions sometimes are contained in social movements aimed at challenging conventions and group norms; these should be viewed negatively by individuals high (vs. low) on the need for closure. As a consequence, high need for closure should manifest itself in ideological conservatism and attempts to maintain group norms and traditions. The extant evidence supports this contention. Thus, Livi (2003) found that the tendency for a laboratory group to main group norms across generations of research participants was increased under a heightened need for closure. Need for closure was also found to be positively correlated to political conservatism (Jost, Glaser, Kruglanski, & Sulloway, 2003a, 2003b), including studies measuring voting behavior in European contexts (Chirumbolo & Leone, 2008). Moreover, the relation between need for closure and conservatism has been found to be mediated by right wing authoritarianism and social dominance orientation (Chirumbolo, 2002; Van Hiel, Pandelaere, & Duriez, 2004). Finally, Italian students high (vs. low) on the need for closure were found to be more nationalistic, religious, exhibited a preference for right wing political parties, reported anti-immigrant attitudes, scored lower on pluralism

and multiculturalism and preferred autocratic leadership and a centralized form of political power (Chirumbolo, Areni, & Sensales, 2004).

Recent evidence suggests also that individuals high on the need for closure prefer groups with impermeable (vs. permeable) boundaries (Dechesne, Schultz, Kruglanski, Orehek, & Fishman, 2008), that is boundaries more likely to allow the group's shared reality to be maintained over time. And in regard to a contemporary social issue, American students with high (vs. low) need for closure had more negative attitudes toward immigration into the United States.

In-Group Favoritism and Out-Group Derogation

The need for closure should lead to greater preference for in-groups over out-groups because the in-group provides the shared reality that group members are seeking, while the out-group suggests a potentially threatening alternative. As an initial test of these ideas, undergraduate students were asked to classify themselves according to their ethnic identity and to complete the need for closure scale. The need for closure scale was positively related to favorability toward one's in-group, and negatively related to out-group attitudes (Shah, Kruglanski, and Thompson, 1998). In a second study, Shah et al. (1998) situationally manipulated the need for closure via time pressure, and told participants that they would be engaging in a group competition. Participants in the high need for closure condition rated their partner more favorably and their competitor more negatively than those in the low need for closure condition. A third study used the same experimental paradigm as Study 2, but measured rather than manipulated the need for closure. Again, need for closure was positively related to positive attitudes toward an in-group member, and negatively related to positive attitudes toward an out-group member.

Additional studies replicated and extended these findings to alternative group contexts. In the first study, participants completed the need for closure scale along with measures of liking for an in-group (fans of the same soccer team) and an out-group (fans of a rival soccer team) and ratings of each group's perceived homogeneity (Kruglanski, Shah, Pierro, & Mannetti, 2002). The results indicated a positive relation between the need for closure and in-group liking and a negative relation between the need for closure and liking of the out-group. Moreover, the higher participants scored on the need for closure scale, the greater was the correlation between perceived homogeneity of the in-group and liking for the in-group, and the greater the correlation between perceived out-group homogeneity and liking for the out-group. This pattern of results was replicated in a second study using divisions between Northern and Southern Italy as operational definitions of the in-group and out-group partition. Finally, this pattern of results was replicated in a third study in an experimental design where the need for closure was aroused via time pressure, and where the participants' own university served as the in-group and another university served as the out-group.

These results suggest that loyalty to one's in-group is qualified by the degree to which it constitutes a good shared reality provider, indexed by an homogeneity of group attitudes, conservativism, and the stability of group norms. In addition, a heightened need for closure leads to attraction to out-groups possessing strongly shared realities, that high need for closure individuals may be tempted to defect to.

Conclusions

The foregoing body of research suggests that the need for closure leads to what has been termed a syndrome of "group centrism" (Kruglanski et al., 2006). When need for closure is elevated, it leads to greater adherence to group norms, rejection of persons behaving inconsistently with these norms, use of autocratic decision-making structures, political conservativism, in-group favoritism, out-group derogation, and a preference for homogeneous over heterogeneous groups. Therefore, an epistemic–social nexus may exist in which an elevation in the need for closure leads to a corresponding increase in the degree to which the groupness (entitativity) and shared reality features of groups are valued by their members. In other words, intrapersonal increases in the need for closure lead to greater pressures toward the formation of strong, distinct, and coherent social groups.

Need for Closure and the Response to Terrorism

Given the established link between need for closure and group centrism, we would expect that increases in the need for closure aroused by intergroup conflict would instantiate a rallying call for a tightening of the group structure and a strong response on the part of the group in defense of itself. Recently, terrorism has represented one such threat to the Western cultures. These days, the terrorism problem is framed as an issue of (homeland) security. According to Webster's Dictionary (Merriam-Webster, Inc., 1986, p. 1062) at least one sense of "security" is "being assured in opinion or expectation, having no doubt, [being] certain." In other words, the instability and insecurity fostered by terrorism may give rise to a state of psychological uncertainty, the unraveling of expectations, and the setting in of doubt.

In this vein, Osama bin Laden, the arch terrorist of our times, proclaimed that "neither America nor the people who live in it will dream of security before we live it in Palestine, and not before all the infidel armies leave the land of Muhammad," and "The Western regimes and the government of the United States of America bear the blame for what might happen. If their people do not wish to be harmed inside their very own countries, they should seek to elect

governments that are truly representative of them and that can protect their interests."

How do these presumed effects of terrorism relate to what we, social psychologists, know about the motivational bases of group phenomena? If terrorism breeds insecurity and uncertainty, it should elevate people's need for cognitive closure. As reviewed above, there is much support for the notion that a heightened need for closure leads to a syndrome of group centrism, including pressures toward uniformity, rejection of opinion deviates, in-group favoritism, out-group derogation, and the endorsement of autocratic leadership. To the extent that uncertainty is the consequence of threat, these findings are consistent with the idea that individuals cling to their leadership when threatened, a phenomenon known as the "rally effect" (Mueller, 1973). For instance, President Bush's approval ratings of 51% prior to the attacks on 9/11 had soared to 86% in the next poll on September 15, 2001. Moreover, President Bush's approval ratings tracked the DHS-issued color coded warning of a possible terrorist attack, a signal that would remind the population of the terrorist threat (Willer, 2004).

Yet, the data presented thus far do not bear directly on issues of uncertainty or need for closure, as neither variable was assessed in these surveys. Furthermore, the research on group centrism had little direct relation to terrorism, as it employed a variety of innocuous laboratory tasks, far removed from the fear-arousing effect that the specter of a terrorist attack may produce. This leaves a gap in knowledge concerning the actual relations between terrorism, need for closure, and the social response to terrorism. We, therefore, conducted several studies aimed at exploring these relations more directly (Orehek et al., 2010).

Our first study asked whether a reminder of the 9/11 event will heighten the need for closure as assessed by our Need for Closure Scale (short-form, Pierro & Kruglanski, 2006). Admittedly, the scale has been developed as a measure of stable individual characteristics, and it has good test-retest reliability. Nonetheless, such reliability is not perfect and it allows for a situational variation that we hoped would be impacted by our manipulations. Participants, American undergraduate students, watched either a slide show accompanied by text and depicting the 9/11 attack on the World Trade Center twin towers, or a control video of approximately equal length (around 7 minutes) about the facilities at Google. As expected, participants scored significantly higher on the Need for Closure Scale after watching the 9/11 stimuli than those who watched the control video. If elevated need for closure constitutes a response to uncertainty, it appears that terrorism reminders induce a sense of uncertainty accompanied by corresponding increases in the need for closure.

Our second study investigated an elderly sample in The Netherlands, partially to avert the criticism that most social psychological research is conducted with college sophomores. Accordingly, our respondents' age ranged from 50 to 97 with a mean of 82. All participants were reminded of the international (9/11) and

national (the killing of the film director Theo Van Gogh by Islamic terrorists in 11/04) context of terrorism, and we used the percentage of Muslims in participants' neighborhood (obtained from the Central Office of Statistics) as a proxy for the personal saliency of the threat. We found that percentage of Muslims in the participants' neighborhood significantly predicted the need for closure. Furthermore, the need for closure significantly predicted in-group identification ("I feel attached to The Netherlands," "I am happy to be Dutch"), and significantly predicted out-group derogation (measured by a feeling thermometer with respect to the out-group).

In our next study, we used a sample of Americans contacted via the Internet. As a proxy for group identification, we used the Singelis (1994) Interdependent Self-Construal Scale with items such as "It is important for me to maintain harmony within my group," and "I will sacrifice my self interest for the benefit of the group I am in." Rather than using the feeling thermometer measure of out-group derogation, we tapped participants' support for tough counterterrorism measures, including torture, secret prisons in foreign countries, the Patriot Act, and the notion that national security is more important than individual rights. We found that the need for closure was significantly related to interdependent self-construal, and to support for tough counterterrorism tactics. In other words, need for closure constitutes an important motivational basis for interdependent self-construal and tough counterterrorism.

Our fourth study addressed a somewhat different question. Notions of motivated cognition, or wishful thinking, suggest that the need for cognitive closure should be related to optimism about the restoration of closure. This, in turn, should be mediated by support for tough counterterrorism measures, perceived as means of restoring closure. Students from two American universities served as participants. The study was carried out during the two weeks following the London Transit Bombing of July 2005. Participants responded to the Shortened Need for Closure Scale, a scale tapping support for the Bush Administration's counterterrorism policies (e.g., "I think George W. Bush is the best man to lead the country in the long run," "Terrorism should be fought by any means necessary," and "I think congress ought to renew the Patriot Act without any changes"), and a scale measuring optimism about future safety from terrorism (e.g., "The United States will be able to capture Osama bin Laden," "The risk of terrorist attacks in the US has decreased as a consequence of the war in Iraq," and "I am confident that our military, civilian police, and homeland security personnel will be able to prevent future terrorist attacks inside the US"). Need for closure significantly predicted optimism about future safety from terrorism. In addition, support for tough counterterrorism significantly mediated the relationship between need for closure and optimism about future safety from terrorism.

Note that in our previous two studies, support for the President (George W. Bush) was confounded with decisive and uncompromising

counterterrorist policies. However, what would happen if the President was open-minded and flexible rather than decisive and tough? Would high need for closure individuals rally around him or her anyway, or would they abandon a leader whose personality and approach appeared inimical to certainty and closure? American college students were reminded that potential presidential candidates were beginning to prepare their campaigns for the 2008 elections. Then they received a description of either an open-minded or a decisive candidate, both described in rather positive terms. The decisive leader was described as "stable and consistent, capable of making quick decisions, and one who holds firm beliefs . . .." The open-minded leader was described as "flexible and adaptive, capable of seeing multiple perspectives, and one who believes in challenging ideas . . .." Our findings were clear cut: in the decisive leader condition, need for closure was positively related to support for the leader, but in the open-minded condition need for closure was negatively related to support for the leader.

In summary, we found support for the notion that terrorism reminders elevate the need for closure and that elevated need for closure enhances group identification, interdependence with others, out-group derogation, and, more specifically, support for tough and decisive counterterrorism policies, and for leaders seen as committed to such policies.

Need for Closure and Extremism

Extremism can be characterized as the holding of attitudes, opinions, and beliefs that differ from established norms, have potentially dangerous consequences, and/or are held by a relatively small percentage of people. Below, we outline the many reasons why the threat of uncertainty may give rise to such extreme views and their associated behaviors. As has been made clear above, the threat of uncertainty gives rise to an increased epistemic need for closure. Such closure alleviates feelings of uncertainty and quells the associated arousal.

In-Group Biases

The epistemic–social nexus linking the need for closure to increased group centrism can have a strong influence on the formation of worldviews that are both extreme and potentially dangerous. A syndrome of group centrism is characterized by strong pressures to agree with members of one's own social group, and to reject and ignore inconsistent views expressed both within the group and by individuals outside the group. This knowledge formation and decision-making structure is likely to give rise to conformity, obedience, group polarization, groupthink, and the justification of violence against out-groups. While each of these outcomes has its advantages, such as increased understanding of the world

(Collins, 1998; Sherif, 1936), increased liking among group members (e.g., Kruglanski et al., 2002), and defense of the in-group (e.g., Orehek et al., 2010), it also presents a potentially dangerous tradeoff.

The lack of attention paid to alternative perceptions and possible courses of action means that these pressures can give rise to inaccuracies in perception, and decisions with disastrous consequences. For example, the desire to conform to one's in-group can lead to errors in judgment, even when the task is extremely simple and the correct answer is obvious (e.g., Asch, 1956) and deliberations that give rise to groupthink have been linked to the poor preparation leading up to the attack by the Japanese on Pearl Harbor, the Bay of Pigs invasion enacted by President Kennedy, the series of decisions by President Johnson to continue to escalate the Vietnam War, and the Watergate cover-up by President Nixon (Janis, 1972, 1982).

The Appeal of Extreme Attitudes

Quite apart from the influence of in-groups and the imperviousness to alternative viewpoints that high need for closure may induce, this motivation may lend appeal to extreme attitudes and viewpoints. By definition, the latter are clear cut and unambiguous; by glossing over nuances and intricacies they afford sweeping generalizations that permit certainty and assurance. Indeed, heightened need for closure has been linked consistently to extreme attitudes and opinions. For example, the need for closure has been positively related to support for militancy, torture, the use of secret prisons in foreign countries, and the notion that national security is more important than individual rights (Orehek et al., 2010). Other research has found links between the need for closure and stereotyping (Bar-Tal & Labin, 2001; Dijksterhuis, van Knippenberg, Kruglanski, & Schaper, 1996), racism (Roets & Van Hiel, 2006), support for militancy (Golec, Federico, Cislak, & Dial, 2005), and in-group favoritism and out-group derogation (Kruglanski et al., 2002; Shah et al., 1998). Also, the need for closure has been linked to personality traits known to give rise to extremist views, such as authoritarianism (Webster & Kruglanski, 1994), including right wing authoritarianism and the social dominance orientation (Chirumbolo, 2002; Roets & Van Hiel, 2006; Van Hiel et al., 2004).

Additional Bases of the Closure–Extremism Connection

Empathy
A number of research findings related to the need for closure suggest additional paths through which the motivation to reduce uncertainty could lead to extremist ideologies. These paths may in some cases contribute to a syndrome of group centrism, yet in other cases may operate independently of it. We briefly describe them below.

First, a reduction in empathy during interpersonal interactions has been witnessed when the need for closure was elevated (Webster-Nelson, Klein, & Irvin, 2003). This effect is presumably the result of the perceiver's increased tendency to seize and freeze on their personal perspectives, reducing the likelihood that the partner's perspectives would be appreciated. Second, due to the focus on one's own perspective, individuals high on the need for closure may be less attuned to their audience during communication (Richter & Kruglanski, 1999). Not surprisingly then, communications of individuals high on the need for closure in the Richter and Kruglanski (1999) study were less accurately understood by the message recipients. These two findings highlight the potential under high need for closure for an excessive focus on one's own ideology, and a lack of awareness of, and concern for, others' opinions and perspectives. Such tendencies would reduce the individual's ability to adjust their worldview according to social feedback, thereby increasing the likelihood of adopting extreme views that deviate from social norms.

Abstractness

Due to the freezing tendency of individuals high in the need for closure, they have a preference for mental representations that are general and abstract, thus affording closure that is consistent across situations. Consistent with this analysis, participants were more likely to describe a target in more abstract language when communicating with someone who was relatively ignorant about the topic than when communicating with a relative expert and potentially critical person likely to arouse fear of invalidity and lowering the need for closure (Boudreau, Baron, & Oliver, 1992). Building on this research, Rubini and Kruglanski (1997) found that participants under high (vs. low) need for closure tended to frame their questions in more abstract terms. This, in turn, led to greater abstractness from the respondents. The consequences of such abstraction included greater perceived interpersonal distance and lessened interpersonal attraction between the communicators, again allowing the ensconcing of one's opinions and their imperviousness to the opinions of others.

Negotiation behavior

Another indication of a greater propensity for extremism among individuals with higher levels of the need for closure has been observed in their behavior in negotiations. De Dreu, Koole, and Oldersma (1999) found that high (vs. low) need for closure participants made smaller concessions to their negotiation partners and engaged in less systematic information processing. A second study found that individuals high (vs. low) on the need for closure are more likely to use stereotypes of their negotiation partner when deciding whether or not to make concessions during the negotiation.

When combined with the knowledge that the need for closure is related to an increased likelihood of stereotyping (e.g., Dijksterhuis et al., 1996) and in-group favoritism (Kruglanski et al., 2002; Shah et al., 1998), this points to the potential for relative extremism. If individuals operating under a need for closure are more likely to view out-groups negatively, and are also more likely to use such perceptions as markers of negotiation behavior (De Dreu et al., 1999), then these individuals are particularly likely to favor harsh treatment of out-groups in conflict management and negotiations.

Taken together, the results from these studies suggest multiple paths through which uncertainty may give rise to extremism. During times of uncertainty, the need for closure is aroused, leading to a focus on one's own perspectives and the rejection of the opinions of others. Moreover, the need for closure leads to a preference for one's own groups, leading to the stereotyping, derogation, and support for violence against out-groups. Attesting to the relative strength between need for closure and the potential for extremism, elevations in the need for closure have been associated with rejection of in-group members and even support for violence against in-group members in the form of imprisonment and capital punishment should they defect from the group norms. In addition to the harsh treatment of others, individuals high (vs. low) on the need for closure have been shown to be less likely to be empathetic, further reducing the likelihood that they would change their opinions when presented with the harmful effects of their worldviews on others. This body of research demonstrates the paths though which uncertainty at the individual level may motivate an individual to form and join groups with extremist ideologies, and the way in which the continued pressure to remain certain in personally held views would buffer the individual from experiencing and attending to the harmful consequences of their worldview for their interpersonal relations, and ultimately for their own interests.

References

Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs*, *70* (Whole No. 416).

Bar-Tal, D. (1990). *Group beliefs: A conception for analyzing group structure, processes, and behavior*. New York: Springer-Verlag.

Bar-Tal, D. (2000). *Shared beliefs in a society: Social psychological analysis*. Thousand Oaks, CA: Sage.

Bar-Tal, D., & Labin, D. (2001). The effect of a major event on stereotyping: Terrorist attacks in Israel and Israeli adolescents' perceptions of Palestinians, Jordanians and Arabs. *European Journal of Social Psychology*, *31*, 265–280.

Boudreau, L. A., Baron, R. M., & Oliver, P. V. (1992). Effects of expected communication target expertise and timing of set on trait use in person description. *Journal of Personality and Social Psychology*, *18*, 447–451.

Cartwright, D., & Zander, A. (Eds.). (1968). *Group dynamics: Research and theory* (3rd ed.). New York: Harper & Row.

Chirumbolo, A. (2002). The relationship between need for cognitive closure and political orientation: The mediating role of authoritarianism. *Personality and Individual Differences*, *32*, 603–610.

Chirumbolo, A., Areni, A., & Sensales, G. (2004). Need for closure and politics: Voting, political attitudes and attributional style. *International Journal of Psychology*, *39*, 245–253.

Chirumbolo, A., & Leone, L. (2008). Individual differences in need for closure and voting behavior. *Personality and Individual Differences*, *44*, 1279–1288.

Collins, R. (1998). *The sociology of philosophies: A global theory of intellectual change*. Cambridge, MA: Harvard University Press.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner's.

Dechesne, M., Schultz, J. M., Kruglanski, A. W., Orehek, E., & Fishman, S. (2008). A psychology of borders: Need for closure and the allure of group impermeability. Unpublished manuscript, University of Maryland.

De Dreu, C. K. W., Koole, S. L., & Oldersma, F. L. (1999). On the seizing and freezing of negotiator inferences: Need for cognitive closure moderates the use of heuristics in negotiation. *Personality and Social Psychology Bulletin*, *25*, 348–362.

De Grada, E., Kruglanski, A. W., Mannetti, L., & Pierro, A. (1999). Motivated cognition and group interaction: Need for closure affects the contents and processes of collective negotiations. *Journal of Experimental Social Psychology*, *35*, 346–365.

Deutsch, M. (1968). The effects of cooperation and competition upon group process. In D. Cartwright & A. Zander (Eds.), *Group dynamics: Research and theory* (3rd ed., pp. 461–482). New York: Harper & Row.

Dijksterhuis, A., van Knippenberg, A., Kruglanski, A., & Schaper, C. (1996). Motivated social cognition: Need for closure effects on memory and judgment. *Journal of Experimental Social Psychology*, *32*, 254–270.

Festinger, L. (1950). Informal social communication. *Psychological Review*, *57*, 271–282.

Golec, A., Federico, C., Cislak, A., & Dial, J. (2005). Need for closure, national attachment, and attitudes toward international conflict: Distinguishing the roles of patriotism and nationalism. In S. P. Shohov (Eds.), *Advances in psychology research*, Vol. 33 (pp. 231–251). Hauppauge, NY: Nova Science Publishers.

Hardin, C., & Higgins, E. (1996). Shared reality: How social verification makes the subjective objective. In R. M. Sorrentino & E. Higgins (Eds.), *Handbook of motivation and cognition, Vol. 3: The interpersonal context* (pp. 28–84). New York: Guilford Press.

Janis, I. L. (1972). *Victims of groupthink*. Boston: Houghton Mifflin.

Janis, I. L. (1982). *Groupthink* (2nd rev. ed.). Boston: Houghton Mifflin.

Jost, J. T., Glaser, J., Kruglanski, A. W., and Sulloway, F. J. (2003a). Political conservatism as motivated social cognition. *Psychological Bulletin*, *129*, 339–375.

Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003b). Exceptions that prove the rule: Using a theory of motivated social cognition to account for ideological incongruities and political anomalies. *Psychological Bulletin*, *129*, 383–393.

Kelly, J., & McGrath, J. E. (1985). Effects of time limits and task types on task performance and interaction of four-person groups. *Journal of Personality and Social Psychology*, *49*, 395–407.

Kruglanski, A. W. (1989). *Lay epistemics and human knowledge: Cognitive and motivational bases.* New York: Plenum.

Kruglanski, A. W. (2004). *The psychology of closed mindedness*. New York: Psychology Press.

Kruglanski, A., & Freund, T. (1983). The freezing and un-freezing of lay-inferences: Effects on impressional primacy, ethnic stereotyping and numerical anchoring. *Journal of Experimental Social Psychology*, *19*, 448–468.

Kruglanski, A., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism. *Psychological Review*, *113*, 84–100.

Kruglanski, A. W., Shah, J. Y., Pierro, A., & Mannetti, L. (2002). When similarity breeds content: Need for closure and the allure of homogeneous and self-resembling groups. *Journal of Personality and Social Psychology*, *83*, 648–662.

Kruglanski, A. W., & Webster, D. M. (1991). Group members' reactions to opinion deviates and conformists at varying degrees of proximity to decision deadline and of environmental noise. *Journal of Personality and Social Psychology*, *61*, 212–225.

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, *103*, 263–283.

Kruglanski, A. W., Webster, D. M., & Klem, A. (1993). Motivated resistance and openness to persuasion in the presence or absence of prior information. *Journal of Personality and Social Psychology*, *65*, 861–876.

Levine, J. M., & Higgins, E. T. (2001). Shared reality and social influence in groups and organizations. In F. Butera & G. Mugny (Eds.), *Social influence in social reality* (pp. 33–52). Seattle, WA: Hogrefe & Huber.

Lickel, B., Hamilton, D. L., Wieczorkowska, G., Lewis, A., Sherman, S. J., & Uhles, A. N. (2000). Varieties of groups and the perception of group entitativity. *Journal of Personality and Social Psychology*, *78*, 223–246.

Livi, S. (2003). Il bisogno di chiusura cognitiva e la transmissione delle norme nei piccoli gruppi [The need for cognitive closure and norm transmission in small groups]. Unpublished doctoral dissertation, University of Rome "La Sapienza," Rome, Italy.

Merriam-Webster, Inc. (1986). *Webster's New Ninth Collegiate Dictionary*. Springfield, MA: Merriam-Webster.

Merton, R. K. (1957). *Social theory and social structure*. New York: Free Press.

Mueller, J. E. (1973). *War, presidents, and public opinion*. New York: Wiley.

Newcomb, T. M. (1951). Social psychological theory. In J. H. Rohrer & M. Sherif (Eds.), *Social psychology at the crossroads* (pp. 331–349). New York: Harper.

Orehek, E., Fishman, S., Dechesne, M., Doosje, B., Kruglanski, A. W., Cole, A. P., Saddler, B., & Jackson, T. (2010). Certainty quest and the social response to terrorism. Unpublished data, University of Maryland.

Pierro, A., De Grada, E., & Livi, S. (2004). Emergenza della leadership nell'interazione di gruppo: Effetti della pressione temporale e dell'ampiezza del gruppo [Emergence of leadership in group interaction: Effects of temporal pressure and group size]. In

A. Pierro (Ed.), *Potere e Leadership: Teorie, metodi e applicazioni* (pp. 121–144). Rome, Italy: Carocci.

Pierro, A., & Kruglanski, A. W. (2006). Shortened need for closure scale. Unpublished data. Universita di Roma.

Pierro, A., Mannetti, L., DeGrada, E., Livi, S., & Kruglanski A. W. (2003). Autocracy bias in groups under need for closure. *Personality and Social Psychology Bulletin*, *29*, 405–417.

Richter, L., & Kruglanski, A. W. (1999). Motivated search for common ground: Need for closure effects on audience design in interpersonal communication. *Personality and Social Psychology Bulletin*, *25*, 1101–1114.

Roets, A., & Van Hiel, A. (2006). Need for closure relations with authoritarianism, conservative beliefs and racism: The impact of urgency and permanence tendencies. *Psychologica Belgica*, *46*, 235–252.

Rubini, M., & Kruglanski, A. W. (1997). Brief encounters ending in estrangement: Motivated language-use and interpersonaI rapport. *Journal of Personality and Social Psychology*, *12*, 1047–1060.

Shah, J. Y., Kruglanski, A. W., & Thompson, E. P. (1998). Membership has its (epistemic) rewards: Need for closure effects on ingroup bias. *Journal of Personality and Social Psychology*, *75*, 383–393.

Sherif, M. (1936). *The psychology of social norms*. New York: Harper.

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, *20*, 580–591.

Van Hiel, A., Pandelaere, M., & Duriez, B. (2004). The impact of need for closure on conservative beliefs and racism: Differential mediation by authoritarian submission and authoritarian dominance. *Personality & Social Psychology Bulletin*, *30*(7), 824–837.

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, *67*, 1049–1062.

Webster-Nelson, D., Klein, C. T., & Irvin, J. E. (2003). Motivational antecedents of empathy: Inhibiting effects of fatigue. *Basic and Applied Social Psychology*, *25*, 37–50.

Willer, R. (2004). The effects of government-issued terror warnings on president approval ratings. *Current Research in Social Psychology*, *10*, 1–12.