ABSTRACT

Title of Document: A SOURCE FOR ALL SEASONS?: THE NEED FOR COGNITIVE CLOSURE AND PREFERENCE FOR GENERALIZED EPISTEMIC AUTHORITIES

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This research investigated the relationship between the need for cognitive closure (NFC) and preference for generalized (over specialized) epistemic authorities. Seven studies tested the hypotheses that: individuals dispositionally higher (vs. lower) in NFC (1) evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities, (2) report relying on generalized epistemic authorities more heavily relative to specialized epistemic authorities, and have epistemic authority sets that (3) are smaller and (4) consist of more generalized epistemic authorities; and individuals in whom NFC is situationally heightened (vs. lowered) (5) evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities, (6) report a greater readiness to rely on more generalized (vs. specialized) epistemic authorities, and (7) report liking and relying more heavily on epistemic authorities framed as multifinal (vs. unifinal) means. Whereas the first six hypotheses outlined above concern the nature of the relationship

between NFC and epistemic authority preferences, the seventh concerns the proposed mechanism, means multifinality, through which this link is established. The findings were mixed. Participants dispositionally higher in NFC did have epistemic authority sets consisting of more generalized epistemic authorities (Pilot Study A) and exhibited greater *implicit* liking of generalized epistemic authorities relative to specialized epistemic authorities (Study 1); however, the latter result was not obtained with *explicit*, self-report measures of liking (Studies 1, 2a,b, and 4). Moreover, unexpected results were obtained regarding NFC's relation to *reliance* on generalized (vs. specialized) epistemic authorities, with individuals higher in NFC, both dispositionally and situationally, exhibiting greater reliance on *specialized* (vs. generalized) epistemic authorities (Studies 1, 3, and 4). Experimental evidence from Study 4 suggests the means multifinality mechanism proposed to link NFC and epistemic authority generalization preferences is, in fact, in play, at least with respect to epistemic authority reliance; however, it appears to operate in a fashion opposite that predicted by the original theory. Finally, as predicted, NFC was inversely related to epistemic authority set size (Study 3 and Pilot Study B). A revised theory is presented to account for these findings, implications of the present research are discussed, and avenues for future research are suggested.

A SOURCE FOR ALL SEASONS?: THE NEED FOR COGNITIVE CLOSURE AND PREFERENCE FOR GENERALIZED EPISTEMIC AUTHORITIES

By

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To my wonderful family.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

In September of 2008, with the race for the presidency of the United States in full swing, the *CBS Evening News* conducted a series of interviews with Republican nominee John McCain's vice presidential running mate, Alaska governor Sarah Palin. Aired in multiple installments over a two-week period, the interviews garnered tremendous national attention, with a number of Palin's responses lambasted by political pundits and replayed ad infinitum by the media. One such heavily scrutinized segment was the following exchange between Palin and CBS anchor Katie Couric, in which Palin appeared unable to name a single print news source she consulted on regular basis:

> *Couric*: And when it comes to establishing your worldview, I was curious, what newspapers and magazines did you regularly read before you were tapped for [the nomination] to stay informed and to understand the world?
>
> *Palin*: I read most of them, again with a great appreciation for the press, for the media…
>
> *Couric*: But, like, what one specifically, I'm curious, that you…
>
> *Palin*: All of them. Any of them that have been in front of me over all these years.
>
> *Couric*: Can you name a few?
>
> *Palin*: I have a vast variety of sources where we get our news. Alaska isn't a foreign country, where it's kind of suggested, "Wow, how could you keep in touch with what the rest of Washington, D.C., may be thinking when you live up there in Alaska?" Believe me, Alaska is like a microcosm of America. (Couric & Palin, 2008)

The cumulative fallout of the Couric interviews appeared to deal the McCain/Palin ticket a heavy blow, with one White House correspondent noting that "Palin's two weeks of interview broadcasts on the *CBS Evening News* coincided with a collapse in her approval ratings and a loss of McCain's gains among white women" (Schrerer, 2008). Most pertinent to the present research, however, is the response – of the general public and media elites, alike – to Palin's newspaper gaffe, which suggests people care a great deal about where major public figures glean their knowledge and information from, and how numerous and diverse these sources are. But *why* should we care so much? Couric may have already answered this when she stated the sources we turn to for knowledge – i.e., our *epistemic authorities* (e.g., Kruglanski et al., 2005) – shape how we see the world, thus forming our *worldview*. If an individual's collection of epistemic authorities – i.e., his or her *epistemic authority set* – is, in fact, a crucial determinant of how he or she views the world, it is clearly a phenomenon worthy of study.

Epistemic authority sets are not only important for understanding the behavior of political elites, such as Palin. Where prominent political figures obtain their information from is clearly of significance, as it can influence what causes they champion, which policies they push, and whose needs go neglected. However, the epistemic authority sets of average citizens are also of considerable import, as they influence critical elements of the democratic process such as voting and public opinion. Moreover, although applying the epistemic authority concept to politics is useful for illustrating its "real-world" significance, individuals rely upon epistemic authorities in *all* areas of their lives, many of which are far removed from the political

domain. Thus, the aim of the present research here was to investigate how epistemic authority preferences and sets – particularly, the size of these sets and the breadth of authority ascribed to members of these sets – are shaped at a general level not restricted to a specific sphere, such as politics. Toward this end, this research centers on the theoretical integration of three bodies of work in social cognition – (1) epistemic authority, and particularly its generalization, (2) means multifinality, and (3) the need for cognitive closure – which I review next.

Chapter 2: Review of the Literature and Overview of the Present Theory

The Need for Closure

The need for closure (NFC) describes a preference for a quick, definitive decision or judgment to the alternative of continued uncertainty and ambiguity (Kruglanski, 1989). Two tendencies are believed to work in tandem to satisfy an individual's need for closure: (1) *seizing*, or reaching closure on a given judgment or decision quickly, i.e., the *urgency* tendency, and (2) *freezing*, or holding on to the judgment reached so that closure is maintained, i.e., the *permanence* tendency (Kruglanski & Webster, 1996).

There exist stable individual differences in the motivation toward closure (Webster & Kruglanski, 1994). However, situational factors can also exert influence upon a person's felt need for closure at any given moment. Specifically, NFC can be heightened via factors that increase the cost of lack of closure on a particular decision task – e.g., ambient noise (Kruglanski, Webster, & Klem, 1993), time pressure (Kruglanski & Freund, 1983), the promise of a more enjoyable subsequent task (Webster, 1993), and mental fatigue (Webster, Richter, & Kruglanski, 1996) – and lowered via factors that increase the cost of premature closure – e.g., increased accountability (De Dreu & Koole, 1997, as cited in De Dreu, Koole, & Oldersma, 1999) and heightened fear of invalidity (Mayseless & Kruglanski, 1987). A substantive body of empirical work has demonstrated the consistent convergence of state and trait operationalizations of NFC (for reviews, see Kruglanski, 2004; Kruglanski & Fishman, 2009).

In line with previous work on the need for closure, the present research operationalized NFC as both a stable trait variable and transient state variable. Because the heart of this research lies with the implications of individual differences in NFC for the structure of epistemic authority sets, which is presumably fairly stable, the trait operationalization was emphasized both conceptually and methodologically. However, NFC was also manipulated in order to provide evidence for the hypothesized causal mechanism underlying its relation to epistemic authority preferences.

Nearly three decades of empirical work has implicated NFC in a multitude of social psychological phenomena, ranging from primacy effects (Webster, Richter, & Kruglanski, 1996) and the fundamental attribution error (Webster, 1993); to stereotype reliance (Dijksterhuis, Van Knippenberg, Kruglanski, & Schaper, 1996; Kruglanski & Freund, 1983); to personality variables such as right-wing authoritarianism (Roets & Van Hiel, 2006), political conservatism (Kossowska & van Hiel, 2003), and dogmatism (Webster & Kruglanski, 1994); to groups phenomena such as the rejection of opinion deviates (Kruglanski & Webster, 1991) and the emergence of autocratic leadership styles (Pierro, Mannetti, De Grada, Livi, & Kruglanski, 2003). Two findings particularly pertinent to the present research, however, concern the relationship between NFC and (1) an attenuated search for information when faced with a decision-making task (Mayseless & Kruglanski, 1987; Webster, Richter, & Kruglanski, 1996), and (2) a preference for multifinal means, i.e. means that serve multiple goals as opposed to just one (Chun & Kruglanski, 2005a). Before elaborating upon each of these findings and their implications for the research

at hand, however, I will first provide overviews of the existent literatures on means multifinality and generalized epistemic authority.

Means Multifinality

Empirical and theoretical work on means multifinality is subsumed under the larger body of work born of *goal systems theory* (e.g., Kruglanski et al., 2002), which adopts a cognitive approach to the study of motivational constructs such as goals – defined as "subjectively desirable states of affairs that the individual intends to attain through action" (Kruglanski & Kopetz, 2009, p. 26) – and means to these goals. Central to this theoretical perspective is the thesis that goals and means are knowledge structures and, as such, are governed by cognitive principles such as activation, accessibility, and strength of association (Kruglanski et al., 2002). This cognitive approach to the study of motivation has produced a wealth of empirical findings elucidating the operation of motivational systems, including work on: goal progress inferences and their consequences (Fishbach & Dhar, 2005; Orehek, 2006); the use of affect as information in goal pursuit (Orehek, Bessarabova, Chen, & Kruglanski, 2011); the bi-directional (i.e., both bottom-up and top-down) nature of spreading activation in goal systems (Shah & Kruglanski, 2003); the transfer of motivational properties, such as degree of commitment and quality of affect, from goals to means (Fishbach, Shah, & Kruglanski, 2004); and nonconscious/implicit goal pursuit (e.g., Chun & Kruglanski, 2005b; Chun, Kruglanski, Sleeth-Keppler, & Friedman, 2012; Shah, 2003; for a review, see Kruglanski & Kopetz, 2009).

Particularly relevant to the research at hand, however, is empirical and theoretical work on the *structure* of goal systems and, more specifically, means

multifinality. In contrast to unifinal means, which serve only one goal, *multifinal* means are means that can be employed in the service of multiple goals (Kruglanski et al., 2002). For example, a standard pen might be considered a unifinal means, as it (most likely) serves only the goal of writing, whereas a laser pen could be considered a multifinal means, as it can be used as *both* a writing instrument and a laser pointer (Zhang, Fishbach, & Kruglanski, 2007).

Although the foregoing example might suggest otherwise, the multifinality (or lack thereof) of a means is not an inherent property of the means itself; rather, it is determined by the person employing it. Almost any means can be unifinal or multifinal, depending on the individual who adopts it and the goal(s) he or she holds. Take, for example, the social networking site Facebook. Whereas one person might use it solely as a (unifinal) means for keeping track of major events in the lives of his family members and good friends, another might employ it for this purpose, *and also* as a (multifinal) means for keeping tabs on acquaintances, commenting on news stories of interest, and perhaps even playing games.

Research on means multifinality has investigated a number of phenomena associated with the size of multifinality sets; that is, the number of goals linked to a single means. For one, multifinal means are more likely to be chosen when the multiple goals the means serves are activated (Kruglanski et al., 2002). In this same vein, Kopetz, Faber, Fishbach, and Kruglanski (2011) identified what they termed the *multifinality constraints effect*, wherein the collection of means deemed acceptable, or *means set*, is winnowed to include only multifinal means when multiple goals are simultaneously activated. In addition, Chun et al. (2012) have demonstrated that

multifinality concerns are capable of operating outside of awareness when one or more implicit background goals are activated in addition to an explicit focal goal.

In the case of multifinality set size, however, bigger is not necessarily better; means multifinality does appear to come at a cost. Associative strength among goal-systemic elements is closely tied to means uni- or multi-finality, such that the larger a means' multifinality set, the weaker the associative strength between the means and each goal and, consequently, the greater the reduction, or *dilution,* of the means' perceived instrumentality to those goals (Zhang et al., 2007). Thus, there is an inherent tradeoff between the number of goals a means serves and the perceived likelihood that the means will lead to the successful attainment of any one of those goals. In other words, means multifinality has a "price" (Kruglanski & Kopetz, 2009).

However, just like the multifinality of a given means, the *cost* of multifinality need not be the same for everyone; individuals' calculus may differ. For example, Kruglanski and his colleagues (2002) have posited that the expectancy of goal attainment, which derives from means instrumentality, may be especially important to individuals high in the locomotion orientation – i.e., individuals who strongly desire progress and movement. This line of reasoning suggests that choices made by high (vs. low) locomotors may be more heavily influenced by the reduction in perceived instrumentality that accompanies means multifinality. In addition, work by Chun and Kruglanski (2005a) has found that high (vs. low) need for closure individuals exhibit a stronger preference for multifinal means, suggesting that, compared to their low NFC counterparts, high NFC individuals weight multifinality set size considerations more heavily relative to the accompanying reduction in instrumentality. This latter

finding is highly relevant to the present research and will be discussed in greater detail shortly. For now, however, I will conclude my review of the existing literature by turning to the third and final body of pertinent research, that concerning epistemic authorities and, more specifically, their generalization/specialization.

Generalized versus Specialized Epistemic Authorities

As previously mentioned, an epistemic authority is any source an individual turns to for knowledge and/or guidance (Kruglanski et al., 2005). Because the ascription of epistemic authority is idiosyncratic, epistemic authorities can be anyone or anything seen as capable of disseminating information, or knowledge, with likely candidates for elevation to epistemic authority status including parents, friends, peers and colleagues, teachers, newspapers, magazines, and public figures.

But all epistemic authorities are not created equal. To any particular source, an individual may ascribe a great deal of epistemic authority, none at all, or any amount in between. Furthermore, independent of the amount of epistemic authority attached to any given source, the *breadth* of the ascribed epistemic authority can fall at any point along a bipolar continuum ranging from highly generalized to highly specialized (Kruglanski et al., 2005).

Generalized epistemic authorities are epistemic sources that individuals turn to for guidance in many or all areas, or *domains,* of life. For example, a highly religious individual might use a religious text, such as the Bible, to dictate how she should act in virtually all areas of her life; for this individual, then, the Bible would constitute a highly generalized epistemic authority. *Specialized* epistemic authorities, on the other hand, are sources that individuals turn to for guidance in only one or very

few area(s) of their lives. For instance, an automotive mechanic would constitute a specialized epistemic authority if an individual turned to him for information only in the knowledge domain of automotive matters.

Although some epistemic authorities would appear to lend themselves more naturally to either generalization (e.g., the Bible) or specialization (e.g., a car mechanic), the degree to which ascribed epistemic authority is generalized or specialized ultimately depends – as with means multifinality – on the person doing the ascribing. For example, it is perhaps unlikely but not inconceivable that an individual would have a great deal of admiration for his car mechanic not confined to the realm of automobiles and, therefore, might consult his mechanic for guidance on numerous matters unrelated to cars. Similarly, an individual who is religious, but not highly so, might limit her epistemic reliance on the Bible to the question of how to treat the poor, thus adopting the position that one should donate generously to charity.

The Need for Closure, Means Multifinality, and Preference for Generalized Epistemic Authorities: A Theoretical Synthesis

The integration of the theoretical and empirical work on the three topics just reviewed – epistemic authority, the need for closure, and means multifinality – suggests fertile yet heretofore uncharted research terrain: namely, the investigation of need for closure's relation to preference for generalized (over specialized) epistemic authorities.

Central to such a theoretical synthesis is the proposition that a generalized epistemic authority constitutes a multifinal means to various (epistemic) ends. Recall that a multifinal means is one that serves multiple goals simultaneously (Kruglanski

et al., 2002). I propose that a generalized epistemic authority is such a means, as it – by definition – provides epistemic guidance in *multiple* areas of life. That is, generalized epistemic authorities provide epistemic closure in numerous knowledge domains, whereas specialized epistemic authorities provide epistemic closure in only the one or few specific domain(s) within which their authority is circumscribed. *Moreover*, the knowledge that one can turn to a single source to fulfill a variety of informational needs that may arise bestows a form of closure in-and-of itself. Therefore, individuals high in NFC should find generalized epistemic authorities especially attractive because they provide cross-situational consistency, in service of the *permanence* tendency that accompanies a heightened need for closure (Chun & Kruglanski, 2005a).

In sum, then, two kinds of uncertainty arise when an individual realizes he or she is in need of additional information: (1) *proximal* uncertainty about the content of the unknown information itself (i.e., the *what*) and (2) *distal* uncertainty about the strategy for obtaining the desired information (i.e., the *how*). As multifinal means, generalized epistemic authorities should help reduce both types of uncertainty, which should be particularly appealing to individuals high in NFC, who find uncertainty (i.e., lack of closure) highly aversive (Kruglanski & Fishman, 2009; Roets & van Hiel, 2008).

The logic of my integrative theoretical argument, therefore, is as follows: If (a) individuals higher (vs. lower) in NFC exhibit a stronger preference for multifinal (vs. unifinal) means, as demonstrated by the work of Chun & Kruglanski (2005a), and (b) generalized epistemic authorities are essentially multifinal means, then (c) *NFC*

should be implicated in the structuring of epistemic authority sets such that higher (vs. lower) NFC should predict a greater preference for and reliance on generalized epistemic authorities relative to specialized epistemic authorities.

In the following section I introduce seven specific hypotheses derived from this broad theoretical argument along with supportive existing empirical findings, where applicable.

Hypotheses and Supporting Existent Research

Hypotheses 1, 2, 3, 4, and 5

It is assumed that for individuals high in the need for closure, a lack of closure is highly aversive (Kruglanski & Fishman, 2009). This is supported by Roets and van Hiel's (2008) finding that individuals high (vs. low) in NFC experience higher levels of distress, as assessed via both self-report and physiological measures (heart rate, blood pressure, and galvanic skin response), when faced with a decision task. Because high NFC individuals are presumably motivated to reduce this negative state by achieving closure on the decision task at hand, and generalized epistemic authorities are able to effect multiple forms of closure by reducing both the aforementioned *what* uncertainty (in numerous knowledge domains) and *how* uncertainty, I predict that individuals dispositionally and/or situationally high in NFC will prefer generalized epistemic authorities more than their low NFC counterparts. More specifically, I set forth the following five hypotheses for consideration.

Hypothesis 1: Individuals dispositionally higher (vs. lower) in NFC will evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities.

Hypothesis 2: Individuals in whom NFC is situationally heightened (vs. lowered) will evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities.

Hypothesis 3: Individuals dispositionally higher (vs. lower) in NFC will have epistemic authority sets consisting of more generalized (vs. specialized) epistemic authorities.

Hypothesis 4: Individuals dispositionally higher (vs. lower) in NFC will report relying more heavily on generalized epistemic authorities relative to specialized epistemic authorities.

Hypothesis 5: Individuals in whom NFC is situationally heightened (vs. lowered) will report a greater readiness to rely on more generalized (vs. specialized) epistemic authorities.

Three areas of previous research lend support to these five foundational hypotheses of the present research. Particularly germane is work by Chun and Kruglanski (2005a) that suggests individuals high in NFC prefer multifinal means to a greater extent than their low NFC counterparts. Across five studies, Chun and Kruglanski found that individuals dispositionally high (vs. low) in NFC, as assessed via Webster and Kruglanski's (1994) 42-item Need for Closure Scale: (1) endorsed the "pro-multifinality" proverb of "killing two birds with one stone" to a greater extent than the "pro-unifinality" proverb "if you run after two hares, you will catch neither" (Study 1); (2) reported more multifinal use of computers (i.e., reported using computers to achieve a greater number of goals) (Study 2); (3) were more willing to sacrifice goal *quality* for the sake of goal *quantity* when selecting a means (Study 3);

(4) were willing to pay a higher price for their multifinality pursuit (Study 4); and (5) were more likely to select a multifinal means (soap) over multiple unifinal means (soap and facial cleanser) that, together, served the same goals (washing one's face and body) as the multifinal means (Study 5). These findings, taken together with the conceptualization of generalized epistemic authorities as multifinal means I previously introduced, lend support to my first five hypotheses.

Although, in Chun and Kruglanski's studies the means were all material (e.g., soap, computers) as opposed to social (i.e., people) in nature, epistemic authorities are very often people, such as parents, idols, friends, and, in the case of self-ascribed epistemic authority, the self. A social conceptualization of means is not unprecedented, however. Sleeth-Keppler (2004) extended Chun and Kruglanski's (2005a) work to the social realm in his investigation of NFC's relation to multifinal (vs. unifinal) conceptualizations of friendship. According to Sleeth-Keppler, for an individual subscribing to a unifinal, or "goal-specialist," view of friendship, a person need only fulfill a single goal or objective in order to qualify as a "friend." Such an individual might, for example, have a "running" friend, a "theater" friend, and so on. For someone subscribing to a multifinal view of friendship, however, an acquaintance would need to serve multiple functions (e.g., be a running buddy *and* a culture aficionado *and* a source of emotional support) in order to be considered a friend. Paralleling Chun and Kruglanski's (2005a) findings, Sleeth-Keppler found that across both German and US samples, individuals dispositionally higher in NFC subscribed to a more multifinal view of friendship.

Work by Kruglanski, Pierro, and Sheveland (2011) has also conceptualized people as means. In their investigation of the association between equifinality set size (i.e., the number of means that all serve the same goal) and commitment to means and goals, Kruglanski et al.'s Study 2 operationalized means as social (i.e., people perceived to be instrumental to goal attainment). Conceptually replicating their findings in Study 1, which involved nonsocial means, equifinality set size was negatively correlated with commitment to each individual social means and positively correlated with perceived likelihood of goal attainment, goal importance, and goal commitment. In sum, then, the findings of both Sleeth-Keppler (2004) and Kruglanski et al. (2011) indicate that social means are functionally equivalent to nonsocial means, which suggests the previously demonstrated relationship between NFC and a preference for nonsocial multifinal means (Chun & Kruglanski, 2005a) should hold for both social and nonsocial epistemic authorities.

A final piece of evidence that lends support specifically to Hypothesis 3 comes from research by Raviv, Bar-Tal, Raviv, and Abin (1993) on Israeli students' perceptions of politicians and professors as epistemic authorities. Raviv and his colleagues found that politically conservative students viewed their political leaders as more generalized epistemic authorities than their liberal counterparts. Although not the focal finding of their work, this result is noteworthy for the purposes of the research being proposed here. Given that political conservatism is positively correlated with NFC (Kossowska & van Hiel, 2003), my theoretical framework suggests this finding might be of a common-causal, or "third variable," nature – that is, a reflection of an underlying positive association between NFC and preference for

generalized epistemic authorities. In other words, it might be that NFC is actually driving the observed relation between political conservatism and the perception of political leaders as generalized epistemic authorities. Although admittedly speculative, this interpretation is nonetheless plausible and congruent with the outlines of my theoretical argument.

Hypothesis 6

Because the crux of Hypotheses 1 through 5 rests with the conceptualization of generalized epistemic authorities as multifinal means, it seems crucial to test this multifinality mechanism directly via experimental manipulation. Therefore, my sixth hypothesis is that individuals in whom NFC is heightened (vs. lowered) will report greater liking of and reliance on epistemic authorities when they are framed as multifinal (i.e., generalized), as opposed to unifinal (i.e., specialized).

Hypothesis 7

My seventh and final hypothesis is that individuals higher (vs. lower) in NFC will have smaller epistemic authority sets. My rationale for this prediction is two-fold. First, individuals whose epistemic authorities tend to be more generalized (Hypothesis 3) should be able to satisfy their epistemic needs with fewer epistemic authorities, as a handful of epistemic authorities should be able to provide the level of epistemic guidance desired across all life domains. In contrast, an individual with an epistemic authority set comprised of highly specialized epistemic authorities would need to consult many different ones when seeking guidance across all of his or her life domains. In the same set of studies by Sleeth-Keppler (2004) discussed earlier, individuals higher (vs. lower) in NFC not only held more multifinal views of

friendship but also had, on average, fewer friends, a finding very much in line with my Hypothesis 7.

The second reason I expect higher (vs. lower) need for closure individuals to have smaller epistemic authority sets follows from previous research showing that individuals high in NFC seek out less information prior to making a decision (Mayseless & Kruglanski, 1987; Webster et al., 1996). For instance, Webster et al. (1996) found that participants in a heightened state of need for closure due to mental fatigue requested fewer pages of information about a job candidate they were asked to make a hiring decision about. Similarly, Mayseless and Kruglanski (1987) investigated the relationship between the need for structure and the fear of invalidity – proxies for the need for closure and the need to avoid closure, respectively – and information seeking prior to rendering a judgment. Consistent with the finding of Webster and her colleagues, participants in the high need for structure (i.e., high need for closure) condition sought out significantly less information before furnishing their judgments than participants in the high fear of invalidity (i.e., high need to avoid closure) condition. Although Webster et al. (1996) and Mayseless and Kruglanski (1987) both manipulated the need for closure/structure, due to the consistent empirical convergence of NFC trait and state operationalizations (see Kruglanski, 2004; Kruglanski & Fishman, 2009) there is every reason to expect this association between NFC and a truncated information search also holds for NFC as a stable individual differences variable. Hence, because epistemic authorities are, by definition, regarded as sources of information, it follows that individuals higher in NFC should generally prefer to consult fewer epistemic authorities when gathering

information and, therefore, have chronically smaller epistemic authority sets than low NFC individuals.

Chapter 3: Overview of the Present Research

To systematically test the foregoing seven hypotheses, seven studies, including two pilot studies and a conceptual replication, were carried out. Pilot Studies A and B, carried out in advance of Studies 1 through 4, served to provide preliminary support, or "proof of concept," for the proposed theoretical framework. Specifically, they tested Hypothesis 3, that individuals dispositionally higher (vs. lower) in NFC have epistemic authority sets consisting of more generalized (vs. specialized) epistemic authorities, and Hypothesis 7, that individuals higher (vs. lower) in NFC have smaller epistemic authority sets. Studies 1 through 4 were designed to test the remaining five hypotheses. More specifically, Studies 1, and 2a,b tested the hypotheses that individuals dispositionally (Study 1) and situationally (Studies 2a,b) higher (vs. lower) in NFC evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities (Hypotheses 1 and 2, respectively); Study 3 investigated whether individuals in whom NFC is situationally heightened (vs. lowered) report a greater readiness to rely on more generalized epistemic authorities (Hypothesis 5), and also provided a second opportunity to test Hypothesis 7, that NFC is inversely related to epistemic authority set size; and Study 4 explored whether increasing the perceived generalization of participants' epistemic authorities by way of a multifinality manipulation leads individuals in whom NFC is heightened (vs. lowered) to report greater liking of and reliance on their epistemic authorities (Hypothesis 6). Finally, data collected in both Studies 1 and 3 were also used to test the Hypothesis 4, that individuals dispositionally higher (vs. lower) in

NFC will report relying more heavily on generalized epistemic authorities relative to specialized epistemic authorities.

Chapter 4: Pilot Study A

Pilot Study A tested Hypothesis 3, that individuals dispositionally higher (vs. lower) in the need for closure have epistemic authority sets consisting of more generalized (vs. specialized) epistemic authorities.

Method

Development of Materials

Fifty-two University of Maryland undergraduate students (29 women, 23 men; mean age of 21.33 (*SD* = 2.83)) were approached by a female undergraduate research assistant in the Student Union and asked if they would be willing to participate in a short study. All participants volunteered to take part without being compensated. Individuals who agreed to participate were administered a paper-and-pencil questionnaire in which they were asked to list (1) life domains they felt were personally relevant to them and (2) sources they turn to for knowledge and/or guidance (i.e., epistemic authorities) in the life domains they listed.

Participants generated a total of 323 life domains, of which 150 were uniquely worded. Of all participant-generated responses, 83.0% (63.1% of uniquely worded responses) were able to be collapsed into the following eight categories: Family, Politics/Current Events, Romantic Relationships, School/Academics, Socializing/Social Relations, Sports/Exercise/Fitness, Work/Career, and Religion. Participants generated a total of 327 epistemic authorities, of which 157 were uniquely worded. The mean number of epistemic authorities generated by participants was 6.29 (*SD* = 3.23). Of all participant-generated responses, 86.7% (78.3% of uniquely worded responses) were able to be collapsed into the following 17

categories: Parent(s), Friends/Peers, Internet, TV, Sibling(s), Professor(s)/Teacher(s), Extended Family, Boss/Supervisor, Newspaper(s), Significant Other, Academic Advisor, Coach(es), Religious Figure, Radio, Social Networking Site(s), Religious Text, and Co-workers. These eight life domains and seventeen epistemic authority categories were then incorporated into the materials for Pilot Study A, the procedure of which is described below.

Participants

Fifty-eight undergraduate students (33 women, 25 men) enrolled in a psychology course at the University of Maryland completed the study in exchange for extra course credit. Participants ranged in age from 18 to 24, with an average age of 19.72 (*SD* = 1.45). Roughly half of the participants (53.4%) were Non-Hispanic White; other races/ethnicities represented in the sample were Asian (17.2%), Black/African-American (12.1%), Hispanic White (8.6%), Native American (5.2%), and Pacific Islander (1.7%). As there were no significant effects of gender, age, or race/ethnicity on the dependent variables of interest, they were not considered further.

Design

Pilot Study A employed a correlational design.

Materials and Procedure

The study was web-based. Participants first completed the 41-item Roets and van Hiel (2007) NFC scale ($\alpha = .87$; see Appendix A), a modified version of the original Webster and Kruglanski (1994) NFC scale that possesses better psychometric properties than its predecessor. Sample items are "I think that having clear rules and order at work is essential for success" and "I like to have friends who are

unpredictable" (reverse-scored). Participants responded to all items on a 6-point Likert scale (1 = *Strongly disagree*, 6 = *Strongly agree*).

Next, participants were provided with the list of 17 epistemic authorities and asked to "please rate the extent to which you rely on each for guidance/knowledge, IN GENERAL" on a 5-point Likert scale (1 = *Not at all*, 5 = *Very much*). Participants then repeated these ratings of the epistemic authorities for each of the eight life domains. Following this administration of the dependent measure, participants were asked if they had any guesses as to what the hypothesis of the study was and demographic information (age, gender, and race/ethnicity) was collected.

Results

Suspicion Check

No participants guessed the study's hypothesis.

Generalization of Epistemic Authorities

The degree of generalization of participants' epistemic authorities was operationalized in two ways: (1) by averaging the "reliance, IN GENERAL" ratings given to all 17 epistemic authorities and (2) by generating a count of epistemic authorities given a "reliance, IN GENERAL" rating of 4 or higher (on the 5-point scale). Both variables were then regressed on NFC in separate simple linear regression analyses.

I expected that NFC would positively predict both measures of epistemic authority generalization. Both of these predictions were borne out by the data. NFC positively and significantly predicted mean reliance on generalized epistemic authorities, $\beta = .34$, $t(56) = 2.68$, $p < .05$, as well as the number of epistemic

authorities given a reliance rating of 4 or higher, $\beta = .34$, $t(56) = 2.68$, $p < .05$. NFC was not a significant predictor of the mean reliance rating of epistemic authorities averaged across the eight specific life domains, $\beta = .22$, $t(56) = 1.68$, $p > .05$, nor was it a significant predictor of the number of epistemic authorities given a reliance rating of 4 or 5, averaged across the eight specific life domains, $\beta = .05$, $t(56) = 0.38$, $p > .05$.

Discussion

The findings of Pilot Study A provide empirical support for my third hypothesis. Individuals dispositionally higher in the need for closure do appear to have more generalized epistemic authorities, as assessed by both (a) the extent to which they report relying on each epistemic authority, *in general*, averaged across an individual's complete epistemic authority set and (b) the total number of epistemic authorities an individual reported relying on heavily (i.e., rated 4 or 5 on a 5-point Likert scale), *in general*. Importantly, individuals higher in NFC did not report relying more heavily on their epistemic authorities in the eight specific life domains, which suggests the observed relationship between NFC and reliance on generalized epistemic authorities does not merely reflect an across-the-board tendency of high NFC individuals to rely more heavily on all types of epistemic authorities, regardless of their generalization/specialization.

Chapter 5: Pilot Study B

A second pilot study was carried out in order to test Hypothesis 7, that the need for closure is inversely related to epistemic authority set size.

Method

Participants

Twenty-three students (15 women, 8 men) enrolled in an undergraduate psychology course at the University of Maryland completed the study in exchange for extra course credit. Participants ranged in age from 19 to 26, with an average age of 20.65 (*SD* = 1.85). As there were no significant effects of age or gender on the dependent variable of interest (epistemic authority set size), neither was considered further.

Design

Pilot Study B employed a correlational design.

Materials and Procedure

The study consisted of a short, web-based survey that asked participants to free-list sources they turn to for guidance/knowledge in their lives (i.e., their epistemic authorities). Participants' responses were linked to their responses to a mass testing survey administered earlier in the semester, which included a short, 14-item version[1] of Webster and Kruglanski's (1994) NFC scale (α = .82; see Appendix B).

[1] The short form of the Webster and Kruglanski (1994) scale was used due to logistical constraints, however, the Roets and van Hiel (2007) scale might have yielded better results due to its superior psychometric properties. This measurement limitation was addressed in future studies.

Results

Epistemic Authority Set Size

The number of epistemic authorities listed by each participant was tallied. Per Hypothesis 7, I predicted NFC would be inversely related to the size of participants' epistemic authority sets. A simple linear regression analysis revealed NFC to be a marginally significant negative predictor of epistemic authority set size, $\beta = -.37$, $t(21) = -1.85$, $p < .10$.

Discussion

The result of Pilot Study B provides tentative empirical support for the hypothesis that individuals dispositionally high in the need for closure have smaller epistemic authority sets – that is, have fewer epistemic authorities – than their low NFC counterparts. Due to the only marginally significant *p*-value, however, an additional study (Study 3) was carried out that afforded a second test of Hypothesis 7. Study 3 also addressed the NFC measurement limitation of Pilot Study B by employing the 41-item Roets and van Hiel (2007) NFC scale, which is psychometrically superior to the 14-item short form of the Webster and Kruglanski (1994) NFC measure.

Chapter 6: Study 1

Study 1 was designed to test the hypotheses that individuals dispositionally higher (vs. lower) in the need for closure evaluate generalized epistemic authorities more positively (Hypothesis 1) and report relying on them more heavily (Hypothesis 4), relative to specialized epistemic authorities. To increase methodological diversity, both an explicit and implicit measure of epistemic authority evaluation (i.e., liking) were used.

Method

Participants

Eighty-eight students (61 women, 27 men) enrolled in an undergraduate psychology course at the University of Maryland completed the study in exchange for course credit. Participants ranged in age from 18 to 32, with an average age of 19.74 (*SD* = 2.07). The majority of participants (67.0%) were Non-Hispanic White; other races/ethnicities represented in the sample were Black/African-American (19.3%), Asian (8.0%), Hispanic White (5.7%), and Native American (1.1%). There were no main effects of gender, age, or race/ethnicity on liking of generalized epistemic authorities, as assessed via self-report or the affect misattribution procedure (AMP). There was an unanticipated significant interaction between age (centered) and Hispanic White (effects coded) that predicted AMP liking of generalized epistemic authorities, $\beta = .77$, $t(81) = 2.00$, $p < .05$. There was also an unanticipated significant interaction between age (centered) and Black/African-American (effects coded) that predicted self-reported liking of generalized epistemic authorities, $\beta = .36$, $t(63) = 2.13$, $p < .05$. Although neither interaction was of theoretical interest, for statistical

reasons both were controlled for in subsequent analyses. There were no other interactive effects among the demographic variables.

Design

Study 1 employed a correlational design.

Materials and Procedure

The study procedure consisted of two parts. Part 1 was administered as a web-based survey and was used both to test Hypothesis 1 and to develop participant-specific materials for Part 2, which took place in a lab setting.

In Part 1, participants first completed the Roets and van Hiel (2007) NFC scale ($\alpha = .85$; see Appendix A). Following this, participants were provided with definitions of both generalized and specialized epistemic authorities (see Appendix C) and asked to provide the name of two personal epistemic authorities they felt fit each definition – i.e., two generalized epistemic authorities and two specialized epistemic authorities. Next, participants were asked to indicate, on 6-point Likert scales (1 = *Not at all*, 6 = *A great deal*), both their liking of and reliance on the first epistemic authority of each type listed. The order in which participants were asked to provide examples and rate each type of epistemic authority was counterbalanced. Finally, participants' guesses about the hypothesis of the study were solicited and demographic information (age, gender, and race/ethnicity) was collected.

Participants who failed to provide *specific* epistemic authorities as instructed in Part 1 were emailed individually by a research assistant and asked to complete an abbreviated "redo" survey in which they were asked to again list two specialized epistemic authorities and two generalized epistemic authorities. Participants who

completed the redo survey correctly were invited to participate in Part 2 of the study, which took place in a lab setting. Participants who either did not complete the redo survey or completed it but again failed to adequately follow the directions were not invited to take part in Part 2.

The purpose of Part 2 was to measure participants' liking of their personal epistemic authorities via the affect misattribution procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005). The AMP is an implicit attitude measure that involves the presentation of an "affect-laden prime" – i.e., the stimulus of interest, the participant's affective response toward which the procedure aims to evince – followed by the presentation of an ambiguous target that participants are asked to classify as either "pleasant" or "unpleasant." The central assumption of the AMP is that participants' implicit evaluations of the stimulus of interest (the prime) "bleed" over into their evaluations of the ambiguous targets.

The AMP used in the present study was a modified version of that used in Payne et al.'s (2005) Study 1. First, participants were told they would be shown a series of Chinese pictographs that they would need to judge as either "pleasant" or "unpleasant" and were instructed to respond relatively quickly to each image. A single trial consisted of (a) the presentation of a prime in the center of the computer screen for 75 ms, followed by (b) a blank screen for 125 ms, followed by (c) the presentation of a Chinese pictograph for 100 ms, backward masked until the participant judged the target image as "pleasant"/"unpleasant." Each participant completed 24 trials. In 12 of these trials, the prime was the name of a generalized epistemic authority the participant provided in Part 1, with each of the participant's

generalized epistemic authorities presented 6 times. In the remaining 12 trials the prime was the name of a specialized epistemic authority the participant provided in Part 1, with each of the participant's specialized epistemic authorities presented 6 times. Both the order in which the primes were presented and their pairing with the Chinese pictographs were randomly determined for each participant. After completing the AMP in its entirety, participants were asked if they spoke Chinese and a funneled debriefing (Bargh & Chartrand, 2000) was administered, marking the end of the study.

Results

Suspicion Check

No participants guessed the hypothesis. Although some participants (n = 8) reported some level of suspicion that the AMP was a measure of liking, or positive affect, no participant drew a connection between this measure and epistemic authority type (generalized, specialized), or NFC.

AMP Liking of Epistemic Authorities

Two participants reported speaking Chinese and their AMP data was excluded from further analysis. For each of the remaining eighty-six participants, a difference score[2] was computed by subtracting the number of AMP trials with a specialized epistemic authority serving as the prime judged as "pleasant" from the number of AMP trials with a generalized epistemic authority serving as the prime judged as

[2] Instead of treating the type of epistemic authority as a within-participants factor, difference scores were computed and used in the analyses for all three dependent variables of interest: AMP liking, self-reported liking, and self-reported reliance. This analysis approach was deemed appropriate given that the crux of the present theory rests on *intra-individual comparisons of generalized and specialized epistemic authorities* that presumably drive the decision regarding what epistemic authority/ies is/are chosen in any given instance.

"pleasant." In a multiple regression analysis (see Table 1) with age (centered), Hispanic White (effects coded), and their interaction included as control variables, NFC significantly and positively predicted AMP difference score, β = .24, $t(78) = 2.17$, $p < .05$.

		B	*SE(B)*	β	*p*
Variables	Age	1.077	.549	.746	.053
	Hispanic White	1.064	.697	.169	.131
	Age X Hispanic White	.947	.551	.656	.090
	NFC	1.502	.691	.236*	.033
R^2			.116		
F			2.568*		.044

Table 1. Evaluation of epistemic authorities as assessed via AMP difference score, regressed on NFC, Age, Hispanic White, and Age X Hispanic White (Study 1); * denotes $p < .05$

Self-Reported Liking of Epistemic Authorities

For each participant, a difference score was computed by subtracting self-reported liking of the first specialized epistemic authority listed in Part 1 from self-reported liking of the first generalized epistemic authority listed in Part 1. Participants who did not correctly follow instructions when listing their epistemic authorities were excluded from the analyses of the liking and reliance self-report data. The excluded participants ($n = 19$) did not significantly differ from the non-excluded participants ($n = 69$) in age ($M_{Excluded} = 19.50$ ($SD = 3.26$), $M_{Included} = 19.81$ ($SD = 1.64$), $t(83) = 0.56$, $p > .05$), NFC ($M_{Excluded} = 3.99$ ($SD = 0.39$), $M_{Included} = 3.91$ ($SD = 0.49$), $t(86) = -0.66$, $p > .05$), or gender ($\chi^2(1, N = 88) = .01$, $p > .05$).

The relationship between NFC and liking difference score was assessed via a multiple regression analysis (see Table 2) in which age (centered), Black/African-

American (effects coded), and the interaction between age and Black/African-American were included as control variables. NFC did not significantly predict self-reported liking difference score, β = .15, $t(62) = 1.19$, $p > .05$.

		B	*SE(B)*	β	*p*
Variables	Age	.238	.142	.287	.100
	Black	-.203	.200	-.062	.609
	Age X Black	.300	.142	.362*	.039
	NFC	.404	.339	.145	.237
R^2			.093		
F			1.584		.190

Table 2. Evaluation of epistemic authorities as assessed via self-report, regressed on NFC, Age, Black, and Age X Black (Study 1); * denotes $p < .05$

Self-Reported Reliance on Epistemic Authorities

As with self-reported liking, a reliance difference score was computed for each participant by subtracting self-reported reliance on the first specialized epistemic authority listed in Part 1 from self-reported reliance on the first generalized epistemic authority listed in Part 1. Also as with the analysis of self-reported liking, participants who did not correctly follow instructions when listing their epistemic authorities in were excluded.

A simple linear regression analysis revealed NFC to not be a significant predictor of reliance difference score, β = -.18, $t(67) = -1.53$, $p > .05$; it was, however, trending ($p = .13$) *in a direction counter to that predicted by Hypothesis 4* (but consistent with the yet-to-be-discussed results of Studies 3 and 4). Moreover, NFC significantly and *positively* predicted self-reported reliance on the first *specialized* epistemic authority participants listed, β = .27, $t(67) = 2.30$, $p < .05$. NFC was not a

significant predictor of self-reported reliance on the first generalized epistemic authority participants listed, β = .04, $t(67) = 0.29$, $p > .05$. (see Table 3)

	(1) Generalized EA reliance				(2) Specialized EA reliance				(3) Reliance difference score			
	B	*SE(B)*	β	*p*	*B*	*SE(B)*	β	*p*	*B*	*SE(B)*	β	*p*
NFC	.081	.278	.036		.737	.320	.271*		-.656	.428	-.184	
R^2		.001				.073				.034		
F		0.085		.772		5.305		.024		2.351		.130

Table 3. Self-reported reliance (1) on generalized epistemic authorities, (2) on specialized epistemic authorities, and (3) difference score (generalized – specialized), regressed on NFC (Study 1); * denotes $p < .05$

Discussion

In Study 1, the need for closure significantly predicted liking of generalized epistemic authorities relative to specialized epistemic authorities, as assessed by an implicit attitude measure, the affect misattribution procedure. A parallel result was not obtained, however, for an explicit self-report measure of liking. Thus, Hypothesis 1 – that individuals dispositionally higher (vs. lower) in NFC evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities – was supported, but only for an implicit measure of liking.

NFC's relation to self-reported reliance on generalized epistemic authorities relative to specialized epistemic authorities was also investigated. Contrary to Hypothesis 4, which posited that individuals dispositionally higher (vs. lower) in NFC would report relying more heavily on generalized epistemic authorities relative to specialized epistemic authorities, NFC was *inversely* related to self-reported reliance on generalized epistemic authorities relative to specialized epistemic

authorities. Although this relationship was not significant, it was trending. Moreover, NFC did significantly and positively predict reported reliance on *specialized* epistemic authorities, when examined independently of reported reliance on generalized epistemic authorities.

Chapter 7: Study 2a

Whereas Study 1 explored the relationship between epistemic authority preferences and the need for closure as a *trait* variable, Study 2a was designed to test Hypothesis 2, that individuals in whom NFC is *situationally* heightened (vs. lowered) will evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities.

Method

Participants

One hundred and four students (79 women, 25 men) enrolled in an undergraduate psychology course at the University of Maryland completed the study in exchange for course credit. Participants ranged in age from 18 to 29, with an average age of 19.14 (*SD* = 1.54). The majority of participants (53.8%) were Non-Hispanic White; other races/ethnicities represented in the sample were Asian (19.2%), Black/African-American (13.5%), Hispanic White (12.5%), Pacific Islander (1.9%), and Native American (1.0%). There were no significant interactive effects between epistemic authority type (generalized, specialized) and age, gender, or race on the dependent variable of interest, epistemic authority evaluation (i.e., liking).

Design

Study 2a employed a 2 (NFC: low, high) X 2 (epistemic authority type: generalized, specialized) mixed-factorial design, with NFC serving as the between-participants factor and epistemic authority type serving as the within-participants factor.

Materials and Procedure

Participants completed the study individually in a lab setting. The entire study procedure was computerized. First, NFC was manipulated via a variant of Avnet and Higgins' (2003) behavior recall paradigm developed and employed by Orehek (2009), which asked participants to recall and write briefly about three times they behaved in a manner consistent with either a high NFC (n = 52) or low NFC (n = 52) mindset. The writing prompts used (see Appendix D) were modified versions of items taken from the Kruglanski and Webster (1994) NFC scale.

Next, participants were provided with short descriptions[3] of two fictional epistemic authorities, one generalized and one specialized:

> *Generalized epistemic authority description*: "[John/Robert] is quite knowledgeable about many different subjects. His friends often turn to him for knowledge relating to politics, art, music, books, and pop culture."
>
> *Specialized epistemic authority description*: "[John/Robert] is quite knowledgeable about politics and current affairs. His friends often turn to him for knowledge in this domain."

Participants then rated their liking of each fictional epistemic authority, in the order in which information about each was presented, on a 6-point Likert scale (1 = *Not at all*, 6 = *Very much*). Finally, demographic information (age, gender, race/ethnicity, and class standing) was collected and a funneled debriefing (Bargh & Chartrand, 2000) was administered, marking the end of the study.

[3] The names (John/Robert) used in each epistemic authority description were randomly determined for each participant and the presentation order of the descriptions was counterbalanced.

Results

Suspicion Check

No participants guessed the study's hypothesis.

Liking of Epistemic Authorities

A mixed-factorial ANOVA, in which NFC (low, high) served as the between-participants factor and epistemic authority type (generalized, specialized) served as the within-participants factor, was conducted. There was no significant interaction between NFC and epistemic authority type, $F(1,102) = 0.71$, $p > .05$. There was also no main effect of NFC, $F(1,102) = 0.81$, $p > .05$. There was, however, a significant main effect of epistemic authority type, $F(1,102) = 37.13$, $p < .05$, with participants reporting greater liking for the generalized epistemic authority ($M = 4.88$, $SD = .97$) than the specialized epistemic authority ($M = 4.26$, $SD = 1.15$).

Discussion

Due to the nonsignificant interaction between the need for closure and epistemic authority type, the results of Study 2a failed to provide support for Hypothesis 2, that individuals in whom the need for closure is *situationally* heightened (vs. lowered) evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities. In order to rule out the possibility that the participants, all of whom were college students, found the specialized epistemic authority's domain of expertise (politics and current affairs) irrelevant and thus did not truly regard him as an epistemic authority, a replication of Study 2a was carried out – Study 2b – that ascribed a different and perhaps more relevant domain of expertise (music) to the fictional specialized epistemic authority.

Chapter 8: Study 2b

Method

Participants

Eighty-five students (62 women, 23 men) enrolled in an undergraduate psychology course at the University of Maryland completed the study in exchange for course credit. Of these, two participants failed to follow instructions for the NFC manipulation (e.g., wrote "Google" or "ok") in response to the low/high NFC prompts and were therefore excluded from further analysis. The remaining eighty-three participants (60 women, 23 men) ranged in age from 18 to 31, with an average age of 19.45 (*SD* = 1.90). A slight majority of participants (56.6%) were Non-Hispanic White; other races/ethnicities represented in the sample were Asian (22.9%), Black/African-American (14.5%), Hispanic White (10.8%), Pacific Islander (1.2%), and Native American (1.2%). There were no significant interactive effects between epistemic authority type (generalized, specialized) and age, gender, or race on the dependent variable of interest, epistemic authority evaluation (i.e., liking).

Design

Like Study 2a, Study 2b employed a 2 (NFC: low, high) X 2 (epistemic authority type: generalized, specialized) mixed-factorial design, with NFC serving as the between-participants factor and epistemic authority type serving as the within-participants factor.

Materials and Procedure

The procedure of Study 2b mirrored that of Study 2a, except that (1) participants completed the study online rather than in the lab, (2) the domain in which

the specialized epistemic authority was particularly knowledgeable was music, rather than politics/current affairs, and (3) a funneled debriefing was not administered due to the online nature of the study.

Results

Liking of Epistemic Authorities

The data were analyzed via a mixed-factorial ANOVA, with NFC (low, high) serving as the between-participants factor and epistemic authority type (generalized, specialized) serving as the within-participants factor. The interaction between NFC and epistemic authority type was not significant, $F(1,81) = 0.05$, $p > .05$. There were also no significant main effects of NFC, $F(1,81) = 1.06$, $p > .05$, or epistemic authority type, $F(1,81) = 0.34$, $p > .05$.

Discussion

The null result obtained in Study 2a – i.e., the nonsignificant interactive effect of NFC and epistemic authority type on liking – was again obtained in Study 2b, suggesting that it was not merely the area of expertise (politics/current affairs) ascribed to the specialized epistemic authority that accounted for the initial failure to find a statistically significant effect in support of Hypothesis 2. Although it is possible that the behavioral recall task used in both Studies 2a and 2b failed to have the desired impact on participants' level of NFC, this seems an implausible explanation given the manipulation's successful employment not only in previous research (e.g., Orehek, 2009) but also in the yet-to-be-discussed Study 4 of the present research program.

Therefore, I believe the failures of Studies 2a and 2b are attributable to a different "fatal" design flaw, one that hits upon the very core of what it means to be, or not be, an epistemic authority. As previously discussed at some length, the ascription of epistemic authority is inherently idiosyncratic, with any source able to be elevated to the status of epistemic authority simply by an individual viewing it as such. Thus, it is not the characteristics – e.g., expertise, or lack thereof, in pertinent knowledge domains – of any particular source that "makes" it an epistemic authority but rather its *adoption* by the individual. This *adoption* criterion is a defining characteristic of epistemic authorities and potentially central to explaining the failures of Studies 2a and 2b.

In order for a source to be viewed as an epistemic authority, an individual must see the source not only as one it would *want* to consult for knowledge, but also as one that it *could*. However, it is unclear how participants in Studies 2a and 2b could have truly viewed (i.e., adopted) the *fictional* "epistemic authorities" they were provided descriptions of as epistemic authorities. Thus, it is perhaps not surprising that no interactive effect of NFC and epistemic authority type on liking emerged. A better test of Hypothesis 2, by proxy of Hypothesis 6, was achieved with Study 4, which I will turn to shortly.

Chapter 9: Study 3

Study 3 was designed to test both Hypothesis 5, that individuals in whom the need for closure is situationally heightened (vs. lowered) will report a greater readiness to rely on more generalized (vs. specialized) epistemic authorities, and Hypothesis 7, that individuals dispositionally higher (vs. lower) in NFC will have smaller epistemic authority sets. In addition, because a measure of NFC was included for the purpose of testing Hypothesis 7, Study 3 also provided a second opportunity to test Hypothesis 4, that individuals dispositionally higher (vs. lower) in NFC will report relying more heavily on generalized epistemic authorities relative to specialized epistemic authorities.

Method

Participants

Ninety-one students (72 women, 19 men) enrolled in an undergraduate psychology course at the University of Maryland completed the study in exchange for course credit. Participants ranged in age from 18 to 27, with an average age of 19.48 (*SD* = 1.39). The majority of participants (62.6%) were Non-Hispanic White; other races/ethnicities represented in the sample were Asian (22.0%), Black/African-American (9.9%), Hispanic (9.9%), Pacific Islander (1.1%), and Native American (1.1%). There were no main effects of gender, age, or race/ethnicity on either dependent variable of interest (epistemic authority set size, reliance on generalized/specialized epistemic authorities). There was, however, an unanticipated significant interaction between age (centered) and gender (effects coded) that predicted epistemic authority set size, $\beta = -.34$, $t(87) = -2.05$, $p < .05$; although not of

theoretical interest, for statistical purposes it was controlled for in subsequent analyses. There were no other interactive effects among the demographic variables.

Design

Study 3 employed both a two-level (NFC: low, high) one-way between-participants design and a correlational design, in order to test Hypotheses 5 and 7, respectively.

Materials and Procedure

The study procedure consisted of two parts, the first of which was administered as a web-based survey. Data collected from this survey was used both to test Hypothesis 7 and to develop participant-specific materials for Part 2, which took place in the lab and served to test Hypothesis 5.

In Part 1, participants completed the Roets and van Hiel (2007) NFC scale (α = .90; see Appendix A) and were then instructed (see Appendix E) to free-list sources they personally considered to be epistemic authorities. After being provided with definitions of generalized and specialized epistemic authorities (see Appendix F), participants were asked to rate the generalization/specialization of each of their epistemic authorities on a 6-point Likert scale (1 = *Highly specialized*, 6 = *Highly generalized*). Finally, any guesses participants had about the hypothesis/es of the study were solicited and demographic information (age, gender, and race/ethnicity) was collected.

Participants who completed Part 1 were invited to participate in Part 2 of the study, which took place in a lab setting. In Part 2, NFC was manipulated via the same behavior recall protocol (see Appendix D) used in Studies 2a and 2b, with

participants randomly assigned to either the high NFC condition or low NFC condition. Following this experimental manipulation, participants were provided with a list of 10 hypothetical decisions (e.g., "What to major in"; see Appendix G) to make across various life domains relevant to college students, given the list of epistemic authorities they generated in Part 1, and asked to indicate, by checking off, which of their sources they would likely consult for each decision. All participants were then administered a funneled debriefing (Bargh & Chartrand, 2001), marking the end of the study.

Results

Suspicion Check

No participants guessed either hypothesis.

Check of Epistemic Authorities

The epistemic authorities participants provided were examined. Twenty-three participants who failed to provide specific epistemic authorities (e.g., "professors," "internet") as instructed and/or listed "Google" were excluded from further analyses. These participants did not significantly differ from the retained participants with respect to gender, $\chi^2(1, N = 91) = .01$, $p > .05$, age, $t(89) = 1.38$, $p > .05$, or NFC, $t(89) = -1.41$, $p > .05$.

Epistemic Authority Set Size

In order to test Hypothesis 7, that NFC is inversely related to epistemic authority set size, the number of epistemic authorities participants provided in Part 1 was regressed on participants' measured NFC, controlling for age (centered), gender (effects coded), and an age by gender interaction term. NFC was a marginally

significant negative predictor of epistemic authority set size, β = -.19, $t(63) = -1.67$, $p < .10$.

Anticipated reliance on generalized epistemic authorities

For two of the ten hypothetical decisions participants were presented with in Part 2, at least 20% of participants indicated they would consult none of their epistemic authorities. These apparent "bad" items were excluded from further analyses (see Appendix G).

In order to test the hypothesis that individuals in whom NFC is situationally heightened (vs. lowered) will report a greater readiness to rely on more generalized (vs. specialized) epistemic authorities (Hypothesis 5), the mean generalization ratings of the epistemic authorities participants checked off for each hypothetical decision were averaged across the eight retained decisions. The mean difference between the high ($n = 34$) and low ($n = 30$) NFC experimental conditions was tested via an independent samples *t*-test. The degree of generalization of the epistemic authorities participants indicated they would consult (i.e., rely upon) for guidance did not significantly differ between the low NFC condition ($M = 4.37$, $SD = 0.95$) and high NFC condition ($M = 4.29$, $SD = 1.13$), $t(62) = 0.74$, $p > .05$. However, in a simple linear regression analysis, *measured* NFC (from Part 1) significantly and *negatively* predicted the average generalization of participants' selected epistemic authorities, β = -.30, $t(62) = -2.43$, $p < .05$. Controlling for experimental condition (low NFC, high NFC) via a multiple regression analysis did not appreciably change this result, with measured NFC remaining a significant negative predictor of reliance on generalized epistemic authorities, β = -.30, $t(61) = -2.46$, $p < .05$. (see Table 4)

		B	*SE(B)*	β	*p*
(1)	NFC (measured)	-.593	.244	-.295*	
	R^2		.087		
	F		5.907		.018
(2)	NFC (condition)	-.141	.251	-.069	.578
	NFC (measured)	-.605	.246	-.301*	.017
	R^2		.092		
	F		3.077		.053

Table 4. Reliance on generalized epistemic authorities regressed on (1) measured NFC alone, and (2) measured NFC, controlling for NFC condition (Study 3); * denotes $p < .05$

Exploratory analyses

A number of exploratory analyses were carried out via simple linear regressions. Participants' measured NFC did not significantly predict the mean number of epistemic authorities consulted across decisions, $\beta = -.03$, $t(66) = -0.23$, $p > .05$, nor did it predict the mean proportion of a participant's epistemic authority set consulted across decisions, $\beta = .17$, $t(66) = 1.41$, $p > .05$. Similarly, the experimental conditions (low NFC, high NFC) did not significantly differ on the average number of epistemic authorities consulted across decisions, $t(66) = -0.38$, $p > .05$, or on the average proportion of participants' epistemic authority set consulted across decisions, $t(66) = -0.89$, $p > .05$.

Discussion

The results of Study 3 lend additional support to Hypothesis 7. As predicted, and mirroring the findings of Pilot Study B, the need for closure was (marginally) negatively correlated with participants' epistemic authority set sizes. In addition,

participants' measured NFC significantly predicted their reliance on generalized epistemic authorities relative to specialized epistemic authorities, although in the *opposite* direction predicted by Hypothesis 4.

This latter finding is unexpected, but consistent with the results of Study 1, and also those of my to-be-discussed Study 4. Moreover, it might explain why, like in Pilot Study B, the correlation between epistemic authority set size and NFC reached only marginal significance. More specifically, if high NFC individuals prefer specialized epistemic authorities to a greater extent than hypothesized, this should necessitate the adoption of a greater number of epistemic authorities, which should, in turn, serve to dampen any reduction in epistemic authority set size that might otherwise arise due to the tendency to attenuate information searches characteristic of high NFC individuals, as illustrated in Figure 1 below.

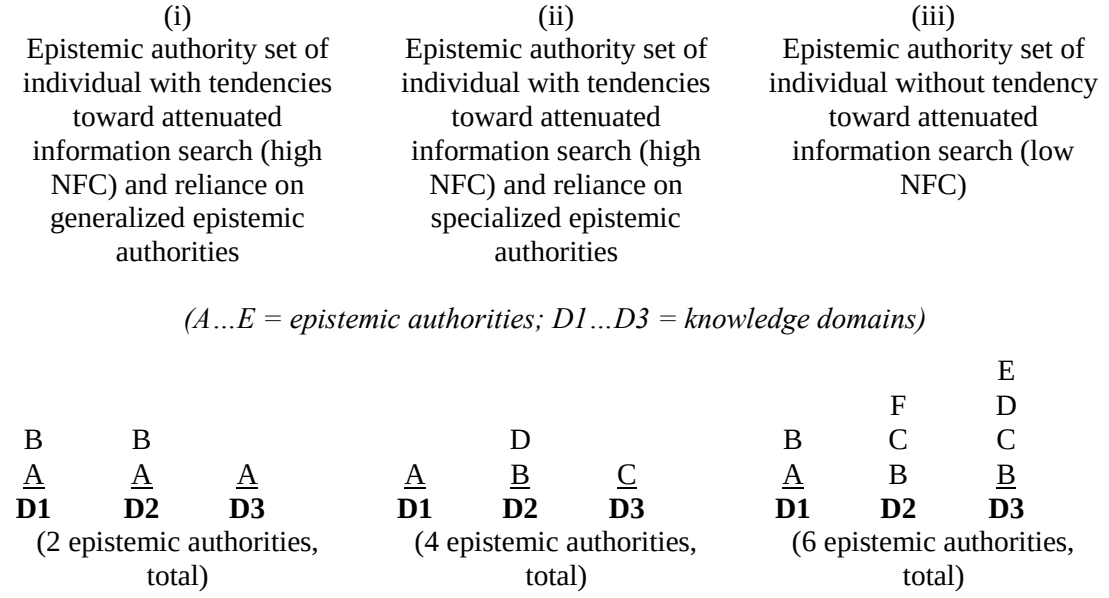

Figure 1. Illustrative example of proposed joint effect of tendencies toward attenuated information searches and preference for generalized versus specialized epistemic authorities on epistemic authority set size, compared to a (low NFC) individual without tendency toward attenuated information searches.

Chapter 10: Study 4

Central to the theory I have proposed here linking the need for closure to epistemic authority preferences concerning generalization/specialization, is the conceptualization of generalized epistemic authorities as multifinal means. Because of this, any research program investigating the merit of this theory should address the presumed multifinality mechanism upon which Hypotheses 1 through 5 rest. As the best way to directly test the operation of this multifinality mechanism is through experimental manipulation, Study 4 was designed to test Hypothesis 6, which posited that individuals in whom NFC is situationally heightened (vs. lowered) will report greater liking of and reliance on epistemic authorities when a multifinal (vs. unifinal) view of them is induced.

Method

Participants

One hundred and twenty-six paid participants (64 women, 62 men) completed the study, which was administered online through Amazon's Mechanical Turk service. Both a comprehension check (see Appendix H) and an attention check (see Appendix I) were embedded in the survey. Forty-one participants were excluded from further analyses for failing at least one of these. This left a final sample of eighty-five participants (48 women, 37 men), who ranged in age from 20 to 74, with an average age of 35.16 (*SD* = 13.65). A little under half (41.2%) of the participants were American, with no other nationality comprising more than 6% of the sample. There were no effects of age or gender on either dependent variable of interest (liking of, reliance on the participant-provided epistemic authority), nor did American

participants significantly differ from non-American participants on either dependent variable. There were also no interactive effects of age, gender, or country (US vs. all other countries) on either dependent variable.

Design

Study 4 employed a 2 (NFC: low, high) X 2 (epistemic authority multifinality: unifinal, multifinal) between-participants experimental design. Participants were randomly distributed among the four resulting experimental conditions.

Materials and Procedure

All participants completed the study online. First, NFC was manipulated via the same behavior recall task (see Appendix D) used in Studies 2a,b and 3, with participants asked to recall and write about times they behaved in a manner consistent with either a low NFC mindset (n = 42) or a high NFC mindset (n = 43). Participants were then provided with a definition of "epistemic authority" and asked to list a person in their lives whom they felt fit this definition. This was immediately followed by a comprehension check, which asked participants to, based on the definition they were previously provided, "describe briefly what an epistemic authority is" (see Appendix H). Next, the multifinality of the epistemic authority participants provided was manipulated by having participants list either one knowledge domain (unifinal manipulation, n = 39) or three knowledge domains (multifinal manipulation, n = 46) they turn to their epistemic authority for guidance in. Each participant was then asked to rate, on 7-point Likert scales (1 = *Not at all*, 7 = *Very much*), the extent to which he or she (1) liked and (2) relied on the epistemic authority. Finally, participants completed an attention check (see Appendix I), guesses about the study's hypothesis

were solicited, and demographic (age, gender, and nationality) information was collected, marking the end of the study.

Results

Suspicion Check

No participants guessed the study's hypothesis.

Excluded Participants

Seven participants failed to pass the comprehension check by providing a satisfactory definition of "epistemic authority." Examples of answers deemed inadequate are "motor man," "super natural," and "it is no other than the famous google.com website.. who has answers for every question." The participants who failed the comprehension check did not significantly differ from the one hundred and nineteen participants who passed it in age (M_{Failed} = 28.43 (SD = 6.92), M_{Passed} = 33.49 (SD = 12.79), $t(124) = -1.04$, $p > .05$), nationality ($\chi^2(1, N = 126) = 1.48$, $p > .05$), self-reported epistemic authority liking (M_{Failed} = 6.57 (SD = 0.53), M_{Passed} = 6.71 (SD = 0.61), $t(124) = -0.60$, $p > .05$), or self-reported epistemic authority reliance (M_{Failed} = 6.14 (SD = 0.90), M_{Passed} = 5.71 (SD = 1.06), $t(124) = 1.05$, $p > .05$). The gender composition of the two groups did significantly differ, however, with men comprising 85.7% of the participants who failed the comprehension check but only 49.2% of the entire sample, $\chi^2(1, N = 126) = 3.95$, $p < .05$.

Thirty-eight participants failed the attention check embedded in the survey. These participants did not significantly differ from the eighty-eight participants who passed it in gender ($\chi^2(1, N = 126) = 1.64$, $p > .05$), nationality ($\chi^2(1, N = 126) = 3.43$, $p > .05$), self-reported epistemic authority liking (M_{Failed} = 6.74 (SD = 0.50), M_{Passed} =

6.69 (SD = 0.65), $t(124) = 0.37$, $p > .05$), or self-reported epistemic authority reliance (M_{Failed} = 5.74 (SD = 1.00), M_{Passed} = 5.74 (SD = 1.08), $t(124) = -0.01$, $p > .05$). Participants who failed the attention check were, however, significantly younger than participants who passed it, M_{Failed} = 28.82 (SD = 8.94) and M_{Passed} = 35.10 (SD = 13.46), $t(102.94) = -3.08$, $p < .05$.

Altogether, forty-one participants were excluded from further analysis for failing the comprehension check (n = 7), the attention check (n = 38), or both (n = 4).

Self-Reported Liking of Epistemic Authority

A two-way ANOVA (see Table 5) revealed no significant interaction between NFC (low, high) and epistemic authority multifinality (unifinal, multifinal) on liking, $F(1,81) = 0.002$, $\eta_p^2 < .001$, $p > .05$. There was, however, a significant main effect of NFC, with participants (n = 42) in the low NFC conditions reporting greater liking (M = 6.83, SD = 0.44) of their epistemic authority than participants (n = 43) in the high NFC conditions (M = 6.53, SD = 0.80), $F(1,81) = 4.12$, $\eta_p^2 = .05$, $p < .05$. There was not a significant main effect of multifinality on liking, $F(1,81) = 0.93$, $\eta_p^2 = .01$, $p > .05$.

	df	*F*	η_p^2	*p*
Multifinality	1	.933	.011	.337
NFC	1	4.120*	.048	.046
Multifinality X NFC	1	.000	.000	.967
Error	81			

Table 5. Multifinality manipulation X NFC manipulation ANOVA for epistemic authority liking (Study 4); * denotes $p < .05$

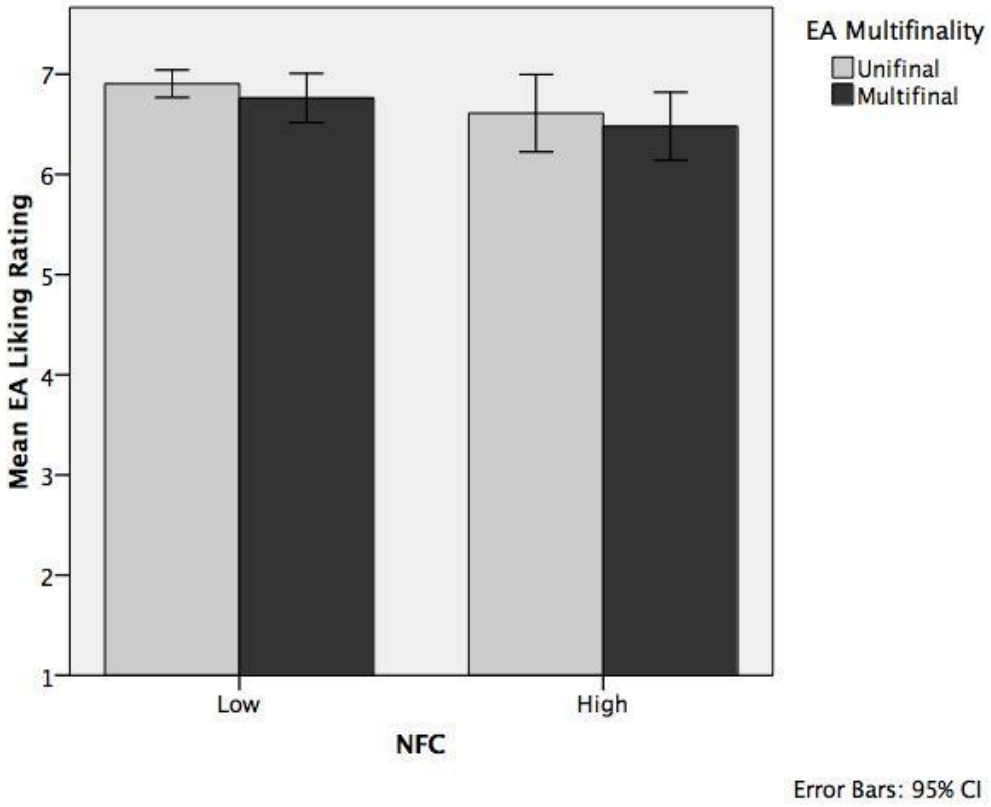

Figure 2. Mean epistemic authority liking by experimental condition (Study 4).

Self-reported reliance on epistemic authority

A two-way ANOVA (see Table 6) revealed a significant interaction between NFC (low, high) and epistemic authority multifinality (unifinal, multifinal) on reliance, $F(1,81) = 6.93$, $\eta_p^2 < .08$, $p < .05$. There was also a significant main effect of multifinality, with participants ($n = 39$) in the unifinal conditions ($M = 6.08$, $SD = 0.93$), reporting greater reliance on their epistemic authority than participants ($n = 46$) in the multifinal conditions ($M = 5.41$, $SD = 1.11$), $F(1,81) = 9.42$, $\eta_p^2 = .104$, $p < .05$. There was not a significant main effect of NFC on reliance, $F(1,81) = 0.24$, $\eta_p^2 = .003$, $p > .05$.

	df	*F*	η_p^2	*p*
Multifinality	1	9.416*	.104	.003
NFC	1	.244	.003	.622
Multifinality X NFC	1	6.929*	.079	.010
Error	81			

Table 6. Multifinality manipulation X NFC manipulation ANOVA for epistemic authority reliance (Study 4); * denotes $p < .05$

A probe of the interaction between NFC and multifinality revealed two significant simple effects (see Figure 3). Among participants whose epistemic authorities were framed as unifinal, those in the high NFC condition (n = 18) reported

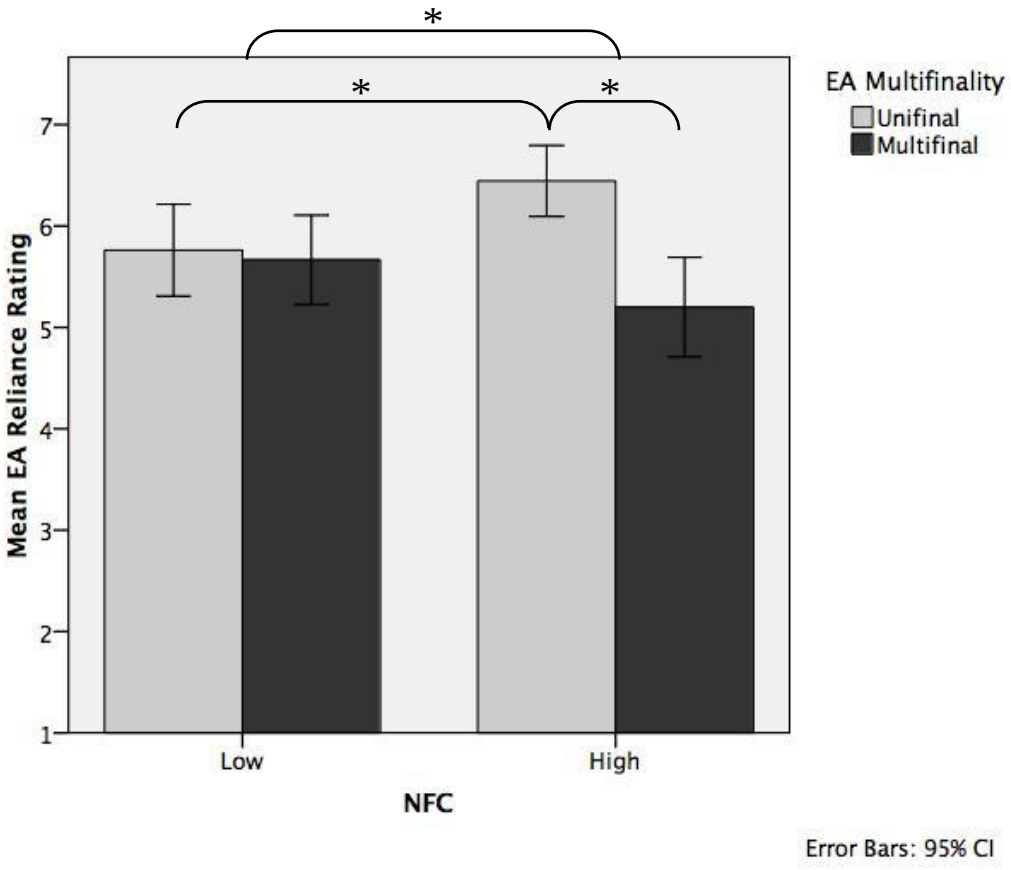

Figure 3. Mean epistemic authority reliance by experimental condition (Study 4).

greater reliance (M = 6.44, SD = 0.71) on their epistemic authorities than participants (n = 21) in the low NFC condition (M = 5.76, SD = 1.10), $t(81) = 2.13$, $p < .05$. And, among participants in whom a high NFC was induced, those whose epistemic authorities were framed as unifinal (n = 18) reported greater reliance (M = 6.44, SD = 0.71) on their epistemic authorities than participants (n = 25) whose epistemic authorities were framed as multifinal (M = 5.20, SD = 1.19), $t(81) = -4.03$, $p < .05$.

Discussion

The interactive effect of the need for closure (low, high) and multifinality framing (unifinal, multifinal) on epistemic authority reliance provides strong evidence in support of means multifinality as the linking mechanism between NFC and reliance on generalized (vs. specialized) epistemic authorities. Although the pattern of the interaction was not as I had hypothesized – with simple effects analyses revealing that (1) participants in the high NFC conditions reported greater reliance when a *unifinal* (i.e., specialized) view of their epistemic authority was induced as compared to when a multifinal (i.e., generalized) view of their epistemic authority was induced, and (2) among participants receiving the unifinal epistemic authority framing, those in whom a high NFC was induced reported *greater* reliance on their epistemic authorities – these findings are nonetheless consistent with those of Studies 1 and 3.

Moreover, the failure to find an interactive effect of NFC and multifinality framing on liking is also consistent with the null result of Study 1 with respect to the relationship between NFC and an explicit, self-report measure of liking). Although there was no interaction between NFC and multifinality framing with respect to participants' liking of their epistemic authorities, there was a main effect of NFC on

liking. More specifically, inducing a high NFC mindset appeared to lead to an across-the-board decrease in participants' liking of their epistemic authorities, perhaps because asking participants to think about sources they turn to for information primed them with an (aversive) sense of lack of closure.

Chapter 11: General Discussion and Conclusion

Summary of Findings

The findings of these studies offer mixed implications for my original theoretical framework. Whereas some results provide support for my theory, other results refute it.

As predicted, participants dispositionally higher in the need for closure did *implicitly* evaluate generalized epistemic authorities more positively relative to specialized epistemic authorities (as assessed via the AMP, Study 1). However a similar result was not obtained with *explicit*, self-report measures of liking (Studies 1, 2a,b, and 4). Moreover, results inconsistent with my predictions were observed with respect to the need for closure's relation to *reliance* on generalized (vs. specialized) epistemic authorities, as individuals higher (both dispositionally and situationally) in the need for closure exhibited/reported greater reliance on *specialized* (vs. generalized) epistemic authorities (Studies 1, 3, and 4). Experimental evidence from Study 4 suggests that the means multifinality mechanism proposed to link the need for closure and preferences regarding generalized (vs. specialized) epistemic authorities is, in fact, in play, at least with respect to epistemic authority reliance; however, it appears to be operating in a fashion opposite to that predicted by my original theory. Lastly, and as predicted, the need for closure was inversely associated with epistemic authority set size (Study 3 and Pilot Study B), although only marginally so.

In light of these results, it is clear that the original theory I proposed is inadequate and, thus, in need of revamping. Any revised theoretical framework of the

intriguing present set of results must account for two things: (1) the findings of Studies 1, 3, and 4, which evinced a *negative* – not positive, as was predicted – relationship between the need for closure and reliance on generalized (vs. specialized) epistemic authorities, and (2) the incongruent findings for reliance and liking, two variables I assumed would have similar manifestations as reflections of a single latent "preference" variable. In what follows I present a revised theoretical synthesis aimed at accomplishing this.

A Revised Theoretical Synthesis

Recall there are two tendencies that accompany a heightened need for closure: *urgency*, or the desire to achieve closure quickly, and *permanence*, or the desire to retain closure (Kruglanski & Webster, 1996). Also recall that the "cost" of the multifinality of a means is a reduction in, or "dilution" of, the perceived instrumentality of that means to any given goal (Zhang et al., 2007). The central argument of my revised theory is that whereas the *permanence*-affording quality of a multifinal means (e.g., a generalized epistemic authority) may make it inherently attractive to high need for closure individuals, *urgency* concerns may outweigh permanence considerations when a means' capacity for effecting closure is called into question due to the dilution of its perceived instrumentality. Next I will discuss how this theoretical treatment addresses both: (1) the inverse relationship observed between the need for closure and reliance on generalized epistemic authorities, and (2) the dissociation of liking of and reliance on generalized epistemic authorities.

The clearest shortfall of my original theory is that the relationship between the need for closure and reliance on generalized (vs. specialized) epistemic authorities

borne out by the data was precisely the opposite of what I predicted, with individuals higher (vs. lower) in the need for closure relying *less*, not more, on generalized epistemic authorities relative to specialized epistemic authorities. That this result was obtained across multiple studies that (a) operationalized the need for closure as both a trait and state variable (Studies 1 and 3, and Study 4, respectively) and (b) measured reliance in divergent ways, is difficult to ignore. Therefore, the first hurdle my revised theory must clear is this: Why might individuals higher (vs. lower) in the need for closure rely *less* heavily on generalized epistemic authorities (relative to specialized epistemic authorities), which, as Study 4 demonstrated, can be reasonably conceptualized as multifinal means to knowledge?

As previously alluded to, the answer may lie with the relationship between the need for closure and the multifinality preference, itself. If you will recall, originally I asserted (as did Chun and Kruglanski, 2005) that multifinal means should be preferred by individuals high in the need for closure because such means (a) afford cross-situational consistency, in service of the *permanence* tendency associated with the need for closure, and (b) allow for the pursuit of (closure on) multiple goals simultaneously. However, it is possible that this proposition gives too short of shrift to the *urgency* tendency that also accompanies a heightened need for closure.

That is, multifinal means only allow for closure on multiple goals *to the extent they successfully serve, or fulfill*, those goals; and multifinality's "cost" is diminished perceived instrumentality of the means and, with it, decreased expectancy of goal attainment (Zhang et al., 2007). High need for closure individuals may be attracted to multifinal means due to their permanence-affording property, yes. However, the

reduction in perceived instrumentality that accompanies multifinality – which speaks to a means' capacity (or lack thereof) for satisfying the *urgency* tendency – presents a problem for individuals high in the need for closure. Namely, if a high need for closure individual employs a multifinal means he views as not very *effective* for goal pursuit, he will likely anticipate needing to try a number of such means before satisfactorily reaching closure on any one of his goals. This "trial and error" process might ultimately afford permanent closure, but without satisfying the desire for urgency. By contrast, unifinal means have lower value (due to lesser permanence) but greater perceived instrumentality, meaning successful goal attainment may be possible via a "one shot" employment of such a means (e.g., a specialized epistemic authority).

Thus, urgency concerns may factor into the means preferences of high need for closure individuals in a more complicated fashion than previously assumed. If the perceived instrumentality of a generalized epistemic authority is reduced to the point where a high need for closure individual views it as incapable (or, at least, likely incapable) of effecting epistemic closure, this source might be passed over in favor of a more specialized epistemic authority. Such a strategy is compatible with the urgency principle, and also the inverse relation between the need for closure and reliance on generalized epistemic authorities relative to specialized epistemic authorities observed in the present set of studies.

If the urgency and permanence principles sometimes operate at cross-purposes to one another in determining multifinal means judgments and evaluations, this may also provide a plausible explanation for the rather puzzling inconsistency between the

results obtained for reliance and those obtained for liking. An implicit assumption of my original theory was that "preference for" epistemic authorities of a certain ilk would manifest in both (a) greater liking for and (b) greater reliance on these epistemic authorities. Yet, across multiple studies, need for closure's relationship to liking was out of sync with its relationship to reliance. Whereas a consistent pattern emerged in that individuals high in the need for closure exhibited and reported a tendency to *rely* less heavily on generalized (vs. specialized) epistemic authorities, a parallel pattern was not observed with respect to *liking* of generalized (vs. specialized) epistemic authorities. Instead, three studies failed to establish the presence of any relationship between the need for closure and explicit liking of generalized (vs. specialized) epistemic authorities. Moreover, the one study in which an *implicit* measure of liking was used (Study 1) revealed a relationship between the need for closure and liking that, although congruent with my original theory, is precisely *opposite* that observed for the need for closure and reliance. Specifically, individuals higher (vs. lower) in the need for closure implicitly evaluated generalized epistemic authorities *more* positively relative to specialized epistemic authorities.

The above findings suggest that, with respect to judgments of epistemic authority, not only are reliance and liking dissociable from one another as manifestations of "preference" but they appear to, at times, operate counter to each another. That is, individuals higher (vs. lower) in the need for closure may have a tendency to *evaluate* generalized epistemic authorities more positively relative to specialized epistemic authorities (at least implicitly), yet, when faced with making a decision, sometimes *rely* more heavily on specialized epistemic authorities.

Such an outcome is compatible with the notion of the permanence and urgency tendencies associated with the need for closure, at times, simultaneously increasing and decreasing, respectively, the attractiveness of multifinal means (e.g., generalized epistemic authorities). With respect to reliance, expectancy concerns may often "win the day." Liking, on the other hand, is more closely linked to value judgments, which may explain why individuals high in the need for closure appear to implicitly like generalized (vs. specialized) epistemic authorities more than their low need for closure counterparts. Explicit, deliberative judgments of liking may, however, be more susceptible to the influence of expectancy perceptions, which may counteract, or "wash out," the implicit liking effect and explain the lack of any observed systematic relationship between the need for closure and explicit liking of generalized (vs. specialized) epistemic authorities.

Future Directions

The work presented here is a first step in the investigation of the need for closure's relation to epistemic authority preferences. One question future research could pursue is why the observed relationship between the need for closure and epistemic authority preferences does not neatly align with previous empirical investigations of the need for closure and preferences regarding multifinal means. Recall the original formulation of my theoretical framework drew heavily from previous research (Chun & Kruglanski, 2005a; Sleeth-Keppler, 2004) showing that individuals high in the need for closure appear to prefer multifinal (vs. unifinal) means to a greater extent than their low need for closure counterparts. Although the results I obtained do not support such a sweeping conclusion with respect to the need

for closure's relation to multifinality preferences, closer inspection of the methods and operationalizations of "preference" employed by Sleeth-Keppler (2004) and Chun and Kruglanski (2005a) reveals this work may not truly be odds with the findings presented here, or the more nuanced revised theory I have proposed.

Sleeth-Keppler (2004) found individuals high in the need for closure endorsed a multifinal definition of friendship (i.e., friends as people "involved in many aspects" of their lives and who "make possible or facilitate many of their current activities, interests, and needs") over a unifinal definition of friendship (i.e., friends as people "involved in few or only one aspect" of their lives) to a greater extent than their low need for closure counterparts. This finding is not incompatible with the revised theoretical framework I have presented, which posits the permanence-affording quality of multifinal means *should* make them inherently attractive to high NFC individuals, even if instrumentality concerns often "win the day" when it comes time to select, or rely upon, a means. In other words, the operational definition of "preference" in Sleeth-Keppler's study – evaluations of abstract notions of multifinal versus unifinal friends and *not* evaluations of, or reliance on, *specific* multifinal or unifinal friends – seems ideal for capturing the influence of the permanence tendency, but *not* the instrumentality-associated influence of the urgency tendency, on the evaluation of multifinal means. Paralleling this, I would expect individuals high in the need for closure to endorse a multifinal (i.e., generalized) definition of epistemic authorities over a unifinal (i.e., specialized) one to a greater extent than individuals low in the need for closure. Future research could test this hypothesis.

A similar account may also explain the result of Chun and Kruglanski's (2005a) Study 1, in which individuals dispositionally high in the need for closure endorsed the "pro-multifinality" proverb of "killing two birds with one stone" over the "uni-finality" proverb "if you run after two hares, you will catch neither" to a greater extent than individuals low in the need for closure. As in Sleeth-Keppler's (2004) study, preference (liking) for multifinal means was assessed at a level of abstraction at which instrumentality-related urgency concerns may have been rendered irrelevant.

The explanation offered above does not, however, speak to the remainder of Chun and Kruglanski's findings. Across their four other studies, a preference for multifinal means manifested in individuals dispositionally high (vs. low) in the need for closure, such that they: (1) reported more multifinal use of computers (Study 2); (2) more readily sacrificed goal *quality* for the sake of goal *quantity* when selecting a camera (Study 3); (3) were willing to pay a higher price for their multifinality pursuit (Study 4); and (4) were more likely to choose a multifinal means (soap) over multiple unifinal means (soap and facial cleanser) that, together, served the same goals (washing one's face and body) as the multifinal means (Study 5).

Recall that my revised theory posits high need for closure individuals may prioritize instrumentality-related urgency concerns (and, thus, unifinal means) over permanence concerns (and multifinal means) *when the perceived instrumentality of a means is reduced to the point where it no longer is viewed as likely to successfully effect goal attainment* and, therefore, closure. It may be the case that, in these four studies, the reduction in the perceived instrumentality of the multifinal (vs. unifinal)

means never crossed this threshold. If participants still felt their selection (Studies, 3, 4, and 5), or use (Study 2) of the multifinal means would afford closure, there would be no cause for urgency concerns to work counter to, let alone trump, ones of permanence.

The specifics of Chun and Kruglanski's studies provide some support for this possibility. For example, in their Study 3, a unifunctional (i.e., unifinal) camera of "very good quality" was pitted against a multifunctional (i.e., multifinal) camera of "good quality." It seems improbable that the decrease in the quality of the goal pursuit from "very good" to "good" meaningfully undermined participants' confidence in the camera's ability to *satisfactorily* accomplish the goal at hand. That is, participants likely did not anticipate that the multifunctional camera might do so poorly of a job they would be forced to seek out a different camera altogether, a process that would prolong closure and presumably be particularly aversive to high need for closure individuals. Similarly, in Chun and Kruglanski's Study 4, both the multifunctional and unifunctional cell phones were described as having "very high" reception rates, introducing the possibility that any difference in the perceived instrumentality of the two cell phones was insufficient to create appreciable uncertainty about the multifinal means' (i.e., the multifunctional cell phone's) capacity for effecting closure.

In sum, it seems plausible that the multifinality manipulations employed in Chun and Kruglanski's studies did not engender conflict between urgency and permanence concerns, which, according to my revised theory, is crucial to multifinal means being passed over in favor of unifinal ones. A means – multifinal or unifinal,

epistemic or otherwise – affords closure only if it sufficiently fulfills the goal(s) it serves. Given this, a means that accomplishes a goal in a suboptimal way – *yet nevertheless effects closure* – is quite different from a means that does not accomplish the goal *at all* and leaves one wanting for closure, anathema to high need for closure individuals. Although individuals high in the need for closure may be willing to sacrifice means instrumentality and quality of goal attainment *to a point*, even high need for closure individuals should be averse to multifinal means once the perceived instrumentality of such means drop below a certain threshold. It may be the case that this uncertainty-instrumentality threshold was not crossed in Chun and Kruglanski's studies.

Although, taken together, the findings of the present research and those of Chun and Kruglanski (2005a) suggest not all multifinal means operate in precisely the same way where the need for closure is concerned, I do not believe epistemic authorities are simply an exception to the rule. Rather, as I argue in the revised theoretical synthesis I have set forth here, there are compelling reasons why high need for closure individuals might sometimes choose or rely more heavily on unifinal means. Future goal systemic research could profitably systematically test the conditions under which high need for closure individuals do and do not "prefer" multifinal means.

Future research should also strive to identify the reason for the apparent discrepancy between the findings of Studies 1, 3, and 4, and those of Pilot Study A. It is not immediately clear why Pilot Study A obtained results in support of my original theoretical framework whereas the bulk of the findings of Studies 1, 3, and 4 largely

refuted it. It is worth noting, however, that the hypothesis tested in Pilot Study A – that individuals dispositionally higher (vs. lower) in the need for closure have epistemic authority sets consisting of more generalized epistemic authorities – was not one directly tested by Studies 1, 3, and 4, which were instead designed to assess liking of and reliance on such epistemic authorities. It is possible, therefore, that these findings are not truly discrepant and, rather, are all accounted for under the revised theory I have proposed. That is, it may be that individuals higher (vs. lower) in the need for closure *do* have epistemic authority sets that consist of more generalized epistemic authorities (perhaps because they implicitly like them more due to their permanence affording quality), yet nevertheless tend to *rely* on their more specialized epistemic authorities to a greater extent "when push comes to shove." This would be compatible with the notion of the urgency and permanence tendencies sometimes operating at cross-purposes with respect to preferences regarding multifinal (vs. unifinal) means.

Lastly, with the exception of Study 1's use of the affect misattribution procedure, the research presented here relied exclusively on self-report data. Future research should employ studies in which both liking of and reliance on epistemic authorities are assessed via a variety of behavioral measures.

Conclusion

The theoretical and empirical work presented and discussed here sheds light upon the association between the need for closure and epistemic authority preferences, and also multifinality's role in this relationship. However, it also raises some important and lingering questions. The present research suggests that need for

closure's relation to multifinality preferences is more complex than previously assumed, but it does not fully elucidate these intricacies. The value of this research, therefore, is closely tied to future research that systematically investigates when, during the course of goal pursuit, individuals high in the need for closure do and do not prefer (evaluate more positively, rely on more heavily) multifinal means over unifinal means to a greater extent than their low need for closure counterparts.

Appendix A: Roets and van Hiel (2007) Need for Closure Scale (Pilot A, Studies 1 & 3)

Read each of the following statements and decide how much you would agree with each according to your attitudes, beliefs and experiences. Please respond according to the following scale, using only one number for each statement.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Slightly agree
5 = Moderately agree
6 = Strongly agree

1	I think that having clear rules and order at work is essential for success.
2	Even after I've made up my mind about something, I am always eager to consider a different opinion.
3	I have never been late for work or for an appointment.†
4	I don't like situations that are uncertain.
5	I dislike questions which could be answered in many different ways.
6	I like to have friends who are unpredictable.*
7	I find that a well-ordered life with regular hours suits my temperament.
8	When dining out, I like to go to places where I have been before so that I know what to expect.
9	I feel uncomfortable when I don't understand the reason why an event occurred in my life.
10	I feel irritated when one person disagrees with what everyone else in a group believes.
11	I hate to change my plans at the last minute.
12	I don't like to go into a situation without knowing what I can expect from it.
13	When I have made a decision, I feel relieved.
14	When I am confronted with a problem, I'm dying to reach a solution very quickly.
15	When I am confused about an important issue, I feel very upset.
16	I would quickly become impatient and irritated if I would not find a solution to a problem immediately.
17	I would rather make a decision quickly than sleep over it.
18	Even if I get a lot of time to make a decision, I still feel compelled to decide quickly.
19	I have never known someone I did not like.†
20	I think it is fun to change my plans at the last moment.*

21	I enjoy the uncertainty of going into a new situation without knowing what might happen.*
22	My personal space is usually messy and disorganized.*
23	I have never hurt another's feelings.†
24	In most social conflicts, I can easily see which side is right and which is wrong.
25	I almost always feel hurried to reach a decision, even when there is no reason to do so.
26	I believe that orderliness and organization are among the most important characteristics of a good student.
27	When considering most conflict situations, I can usually see how both sides could be right.*
28	I don't like to be with people who are capable of unexpected actions.
29	I prefer to socialize with familiar friends because I know what to expect from them.
30	I think that I would learn best in a class that lacks clearly stated objectives and requirements.*
31	When thinking about a problem, I consider as many different options on the issue as possible.*
32	I like to know what people are thinking all the time.
33	I dislike it when a person's statement could mean many different things.
34	It's annoying to listen to someone who cannot seem to make up his or her mind.
35	I find that establishing a consistent routine enables me to enjoy life more.
36	I enjoy having a clear and structured mode of life.
37	I prefer to interact with people whose opinions are very different from my own.*
38	I like to have a place for everything and everything in its place.
39	I feel uncomfortable when someone's meaning or intention is unclear to me.
40	I always see many possible solutions to problems I face.*
41	I believe that one should never engage in leisure activities.†
42	I'd rather know bad news than stay in a state of uncertainty.
43	I do not usually consult many different opinions before forming my own view.
44	I dislike unpredictable situations.
45	I dislike the routine aspects of my work (studies).
46	I feel there is no such thing as an honest mistake.†

*Reverse-worded item †Lie scale item

Appendix B: Short Form of Webster and Kruglanski (1994)

Need for Closure Scale (Pilot B)

Read each of the following statements and decide how much you would agree with each according to your attitudes, beliefs and experiences. Please respond according to the following scale, using only one number for each statement.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Slightly agree
5 = Moderately agree
6 = Strongly agree

1	In case of uncertainty, I prefer to make an immediate decision, whatever it may be.
2	When I find myself facing various, potentially valid, alternatives, I decide in favor of one of them quickly and without hesitation.
3	I have never been late for work or for an appointment.†
4	I prefer to decide on the first available solution rather than to ponder at length what decision I should make.
5	I get very upset when things around me aren't in their place.
6	Generally, I avoid participating in discussions on ambiguous and controversial problems.
7	When I need to confront a problem, I do not think about it too much and I decide without hesitation
8	When I need to solve a problem, I generally do not waste time in considering diverse points of view about it.
9	I prefer to be with people who have the same ideas and tastes as myself.
10	Generally, I do not search for alternative solutions to problems for which I already have a solution available.
11	I feel uncomfortable when I do not manage to give a quick response to problems that I face.
12	I have never hurt another person's feelings.†
13	Any solution to a problem is better than remaining in a state of uncertainty.
14	I prefer activities where it is always clear what is to be done and how it needs to be done.
15	After having found a solution to a problem I believe that it is a useless waste of time to take into account diverse possible solutions.
16	I prefer things to which I am used to those I do not know, and cannot predict.

†Lie scale item

Appendix C: Generalized/Specialized Epistemic Authority Definitions (Study 1)

"We all have sources (e.g., parents, friends, newspapers) we turn to for knowledge and guidance in our lives; these sources are called ***epistemic authorities***. Epistemic authorities differ in the breadth of their perceived competence and expertise. In other words, you probably turn to some epistemic authorities for knowledge and/or guidance in many areas of your life and others for knowledge and/or guidance in a single or very few area(s) of your life. Sources that you turn to across many areas of your life are ***generalized*** epistemic authorities, whereas sources you turn to in a very limited area of your life are ***specialized*** epistemic authorities."

Appendix D: NFC Behavior Recall Manipulation Prompts (Studies 2a&b, 3, and 4)

All participants: "Please think back and recall times…"

Low need for closure condition:

(a) "…when, even after you made up your mind about something, you were eager to consider a different opinion."

(b) "…thinking about a problem, you considered as many different options on the issue as possible."

(c) "… you disliked the routine aspects of your work or studies."

High need for closure condition:

(a) "… you believed that orderliness and organization were among the most important characteristics of a good student."

(b) "… you quickly became impatient and irritated when you did not find a solution to a problem immediately."

(c) "… you felt irritated when one person disagreed with what everyone else in a group believed."

Appendix E: Epistemic Authority Free-Listing Instructions (Study 3)

“Please list the different sources you turn to for guidance/knowledge in your life. They can be other people (e.g., a parent, a TV personality) but can also be things such as a newspaper. PLEASE BE SPECIFIC. For example, if you turn to peers/friends for guidance/knowledge, please list them by name (first name only), instead of simply writing "friends.”

Appendix F: Generalized/Specialized Epistemic Authority Definitions, Rating Instructions (Study 3)

"A SPECIALIZED epistemic authority is a source that you turn to for knowledge/ guidance in a relatively limited area of your life. A GENERALIZED epistemic authority is a source that you turn to for knowledge/guidance in many different life domains. Please rate the extent to which YOU consider each of the sources you listed above to be a specialized/generalized epistemic authority."

Appendix G: Decision Task List (Study 3)

1. What to major in.
2. Where to live.
3. Whether to join a fraternity/sorority; which fraternity/sorority to join.
4. What to do following a big fight with your parents.
5. Whether to apply to graduate school.
6. What exercise/diet regimen to adopt.
7. What job offer to accept after graduation.
8. Whether or not to ask out someone you're romantically interested in.
9. How best to study/prepare for a specific course you hear is difficult.†
10. What candidate to vote for in the 2012 presidential election.†

†Dropped from final analyses

Appendix H: Comprehension Check (Study 4)

Definition of "epistemic authority" provided to participants:

> "We all have sources (e.g., parents, friends, newspapers) we turn to for knowledge and guidance in our lives; these sources are called ***epistemic authorities***."

Instructions presented on following page (note: participants were unable to go back to the previous page with their browser):

> "Based on the definition we provided on the previous page, please describe briefly what an ***epistemic authority*** is."

Appendix I: Attention Check (Study 4)

"Recent research on decision-making shows that choices are affected by context. Differences in how people feel, their previous knowledge and experience, and their environment can affect choices. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read the directions; if not, some results may not tell us very much about decision making in the real world. To show that you have read the instructions, please ignore the question below about how you are feeling and instead check only the 'none of the above' option as your answer. Thank you very much.

Please check all words that describe how you are currently feeling."

☐ Interested	☐ Hostile	☐ Nervous
☐ Distressed	☐ Enthusiastic	☐ Determined
☐ Excited	☐ Proud	☐ Attentive
☐ Upset	☐ Irritable	☐ Jittery
☐ Strong	☐ Alert	☐ Active
☐ Guilty	☐ Ashamed	☐ Afraid
☐ Scared	☐ Inspired	☐ None of the above

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