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Says Who? : Epistemic Authority Effects in Social Judgment

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Abstract

This chapter features the concept of ascribed epistemic authority (Kruglanski, 1989) offered as a unique perspective on source effects in social judgment. In contrast to prior approaches that viewed the source of communication as external to the self, we assume that both the self and external sources may be assigned different degrees of epistemic authority in different domains, and that this determines how individuals process information, make decisions and undertake actions. The present framework traces the socio-developmental aspects of epistemic authority assignments, and considers individual differences in the distribution of authority assignments across sources. From this perspective, we claim a central role in human judgment to the information's source, and the assessment of its epistemic authority is seen to constitute an essential preliminary phase in individuals' approach to information.

Introduction

A critical aspect of human social functioning concerns people's informational dependence on others (Kelley & Thibaut, 1968). As we negotiate our way through the labyrinths of interpersonal relations and task exigencies we encounter a continuous flow of information in the form of communications, advice, exhortations and pleas from a variety of sources. These pose the ubiquitous question of whom to (informationally) trust, and whose statements to discount, or regard with suspicion. The issue has profound implications not only for one's personal dealings with one's social and physical environments but also for the workings of society itself. In this vein, the political scientist Robert Putnam (2000) commented on the declining trust in government characteristic of contemporary American society and on the dangers this poses to its communal functioning. In other words, for many Americans the government has ceased to represent an informational source to be relied on, encouraging political disengagement and civic apathy.

The significance of source variables for individuals' reactions to the information given has not been lost on social psychologists. To the contrary, such variables have figured prominently in major theories of communication and persuasion beginning with the classic works of the Yale group (Hovland, Janis & Kelley, 1953; Hovland & Weiss, 1951). This continues with the currently influential dual-mode theories of persuasion (Petty & Cacioppo, 1986; Chaiken, Lieberman & Eagly, 1989) and the parametric unimodel (Erb et al., 2003; Kruglanski & Thompson, 1999a,b; Pierro, Mannetti, Kruglanski & Sleeth-Keppler, 2004). Yet these various treatments have been limited in scope and have not addressed the full array of issues that source characteristics may raise in the domain of social judgment.

The present article introduces a broader perspective on source effects framed from the subjective standpoint of the information's recipient. We first review the treatment of source effects in several major models of persuasion. We then introduce the present, framework focused on the concept of "epistemic authority," and review empirical research conducted under its aegis. A final discussion highlights the unique properties of the present approach and considers its implications for the place of source effects in notions of information processing and human judgment.

The Early Work: Hovland, Janis & Kelley's (1953) Learning Theory Paradigm of Source Effects

Hovland et al.s (1953) conception of persuasion and attitude change rested on the learning theory paradigm dominant at the time. From that perspective, communicators' influence derives from the incentives they provide. These can be tangible or intangible and based on such source characteristics as expertness, trustworthiness, similarity, or

likeability. In turn, these (and other possible characteristics) are learned through experiencing the consequences of accepting or rejecting a given source's influence, and are generalized to other similar sources. In general, Hovland et al. (1953) suggest that the learned characteristics of the source determine individuals' motivation to attend to and comprehend the message, as well as accept its implications (McGuire, 1969). Within this conceptual framework, Hovland et al. (1953) focused in particular on the variable of communicator credibility, that they parsed into its two constituents, expertness and trustworthiness, the latter referring to the communicator's intent to convey valid information. Early empirical studies (e.g, Hovland and Weiss, 1951) indeed showed that messages ascribed to high credibility sources tend to be accepted to a greater extent than ones ascribed to sources of low credibility.

An issue that occupied researchers of source effects concerned a separation and comparison of the two components of credibility namely expertise and trustworthiness (Cohen, 1964; Hovland et al., 1953). In an empirical investigation of this problem, Kelman and Hovland (1953) exposed high school students to a communication advocating a more lenient treatment of juvenile delinquents. This communication was attributed to one of three different sources: (1) a well informed and intentioned judge, i.e., a source possessing a high degree of expertise as well as of trustworthiness, (2) a member of the studio audience, i.e., a source of intermediate presumed expertise and trustworthiness, and (3) a juvenile delinquent on bail, charged with drug dealings and other shady business, i.e. a source of high presumed familiarity (and in this sense "expertise") in the domain, yet of low trustworthiness. As might be expected, the message delivered by the judge had significantly greater persuasive impact than one

delivered by the juvenile delinquent with the studio audience member's message exerting an intermediate impact, closer in magnitude to that of the judge than to the delinquent. Hovland et al. (1953) interpreted these findings as suggesting that trustworthiness may play a greater role in attitude change than expertness. Subsequent research confirmed the significant role that the communicator's intent may play in attitude change (e.g., Allyn & Festinger, 1961; Weiss & Fine, 1955; 1956).

Though the distinction between expertise and "trustworthiness" (understood as the intent to speak the truth) is of interest, the attempt to separate the two and pit them against each other could be misleading. For the question always turns on whom to (informationally) trust (the ubiquitous "says who?" question in the title of this chapter). In this sense expertise, intent as well as a possible host of other learned source characteristics (e.g., membership in one's ingroup, age, gender) drive the acceptance of communications through the overall variable of credibility.[1] In our subsequent analysis, we refrain from analytically disentangling the different source characteristics that could contribute to a source's epistemic authority, and instead address the attribution of such authority as a Gestalt.

Source Effects from the Dual Mode Perspective: The Elaboration Likelihood Model

An important shift in the way persuasion effects in general and source effects in particular were approached by persuasion researchers was occasioned by the work of Petty and Cacioppo (1986) on the Elaboration Likelihood Model (ELM), and Chaiken's (1979) work on the Heuristic-Systematic Model (HSM). Conceptually, this shift signaled a break from the neo-behavioristic paradigm adopted by Hovland et al. (1953) and a

[1] For instance, one might evolve a lay theory that even well intentioned experts cannot be trusted because of their arrogance and tendency to operate through the blinds of their misconceptions.

move toward the cognitive Zeitgeist as part of the "cognitive revolution" that has been transforming the psychological science as a whole. Specifically, both of these dual mode theories regarded persuasion as essentially a cognitive activity wherein conclusions are reached on the basis of more or less extensive processing (or "elaboration") of various types of information available in the persuasive context.

Beside its novel conceptual perspective on source effects, the dual-mode paradigm was based on the recognition that prior research on this topic yielded a disappointing crop of empirical findings. As Petty and Cacioppo (1986, p.125) put it: "…although it might seem reasonable to propose that by associating a message with an expert source agreement could be increased (e.g., see Aristotle's Rhetoric), the accumulated contemporary research literature suggested that expertise effects were considerably more complicated…Sometimes expert sources had the expected effects…sometimes no effects were obtained…, and sometimes reverse effects were noted.. Unfortunately, the conditions under which each of these effects could be obtained and the processes involved in producing these effects were not at all apparent…"

In the ELM, source characteristics are often considered as "cues" that is as "peripheral" signals likely to impact persuasion under conditions of a low "elaboration" likelihood, that is, in circumstances where an individual's motivation and/or capacity to process information are low. For instance, in the classic study by Petty, Cacioppo and Goldman (1981) source expertise was manipulated orthogonally to message argument quality. Cross-cutting both, the researchers manipulated participants' issue involvement, considered as a determinant of elaboration likelihood. It was found that source expertise had persuasive effects only under conditions of low issue involvement but not under

conditions of high issue involvement. By contrast, message argument quality had persuasive effects only under high, but not under low, issue involvement. These findings were interpreted to demonstrate the cue function that source characteristics may often fulfill, and according to which they may exert impact under low (but not under high) elaboration likelihood conditions.

It is noteworthy that in the ELM, source characteristics may fulfill functions other than that of a "cue." In particular, they may constitute "message arguments" as when a physically attractive person advertises a beauty product (her or his appearance serving as proof of the product's effectiveness) (Petty & Cacioppo, 1986). Finally, according to the ELM source characteristics may serve a motivating function, prompting extensive or restricted elaboration of the information. Knowing that a source is expert or that he/she represents a majority position (Mackie, 1987) may motivate recipients to pay close attention to its message and to take it seriously. Similarly, knowing that the source is inexpert might reduce the recipients' consideration of the message.

Source Effects in the Heuristic Systematic Model

In the HSM, source characteristics are regarded as "heuristic" information, related to simple and general rules of thumb or "heuristics," such as "expertise implies correctness," "friends can be trusted," or "majority opinions are valid." Knowing that a source is a friend, an expert, or member of a majority may then prompt an acceptance of her or his recommendations through an application of the corresponding heuristic. Much like the ELM, the HSM too distinguishes between two separate and qualitatively distinct modes of persuasion: The heuristic mode depicted above (likely to be adopted when the recipients' cognitive and motivational resources are limited) and a systematic mode in

which the message information is carefully considered (likely to be adopted when the recipients' cognitive and motivational resources are ample) (Chaiken, Liberman, & Eagly, 1989). Furthermore, the heuristic mode is assumed to afford lesser judgmental confidence than the systematic mode; hence it is assumed to be opted for when lower confidence threshold is deemed sufficient for the recipient's purposes. When it is insufficient, that is, when the issue is important enough to require considerable confidence, the systematic mode is assumed to "kick in" instead.

Source Effects in the Unimodel

Both the ELM and the HSM stress the qualitative distinctions between the two modes of persuasion (i.e., the peripheral and central modes in the ELM and the heuristic and systematic modes in the HSM). By contrast, a recently proposed "unimodel" (Erb et al., 2003; Kruglanski & Thompson, 1999a,b, Kruglanski et al., 2004; Pierro, Mannetti, Kruglanski & Sleeth-Keppler, 2004; Chun, Spiegel & Kruglanski, 2002) stress the commonalities between those modes. In these terms, both "peripheral cues" and "message arguments" function as evidence for various conclusions that recipients may draw from information in the persuasive context. Some such conclusions may refer to actual recommendations espoused by the communication source, or flowing from the message arguments. Other conclusions may relate to the desirability of paying close attention to the source's pronouncements, e.g., because of its expertise, prestige, or power (Fiske, 2004) versus ignoring them because of the source's low standing on these particular dimensions.

According to the unimodel, the evidential function of information derives from a fundamental syllogistic structure. For instance, a person may subscribe to a (major)

premise that “experts are correct” (or, to the belief that “if expert, then correct”) and then assume that a position expressed by a source was valid because “she is an expert” (a minor premise). Similarly, a person may assume that “anything that promotes a clean environment should be supported” (a major premise), and then proceed to accept the statement that “electrically powered automobiles should be supported” because of the belief that “electrically powered automobiles preserve a clean environment” (a minor premise). Note that whereas the former statement about expertise represents a peripheral or heuristic “cue,” and the latter represents a “message argument,” both are seen to function in a fundamentally identical syllogistic manner. The same would be true of a case where a source’s characteristic, e.g., physical attractiveness, functioned as a “message argument,” that is, as a “minor premise” that in conjunction with a major premise whereby “physical attractiveness of a cosmetic product’s user attest to its effectiveness,” yields the conclusion that the product, indeed, is effective. Finally, the case where a source characteristic (e.g., ‘social power’) prompts an individual to closely attend to the source’s argument may be based on a conviction (major premise) that “the views of powerful persons are worth considering.” Thus, the unimodel stresses the similarities between source and message effects based on their similar syllogistic functioning as evidence for various conclusions.

On the Uniqueness of Source Effects: The Concept of Epistemic Authority

In contrast to the foregoing emphasis on commonalities that source-effects may share with other “peripheral cues” (in the ELM), other “types of heuristic information” (in the HSM), or other minor premises (in the unimodel) the present chapter highlights ways in which source effects are unique. As shown subsequently, this framework offers

a novel perspective on source effects affording fresh insights and ways of thinking about this important domain of phenomena. Our central construct is that of "epistemic authority" This construct, originally proposed by Kruglanski (1989), denotes a source on whom an individual may rely in her or his attempts to acquire knowledge on various topics. This concept is akin to the omnibus notion of source's credibility (apart from the source characteristics, such as expertise or intent, that may imply credibility to different persons) and it addresses the extent to which an individual is prepared to rely on a source's information and to accept it. The epistemic authority of various sources may vary and the authority of a given source may vary across domains as well as across life-span developmental phases. The characteristics that serve as the basis for identifying a source as an epistemic authority can be general, like for instance seniority (for example, of an elder), a role (for example, of a priest, a leader or a teacher), or level of education (for example, of a Ph.D degree holder), an appearance in print (for example, in a book or a newspaper), or specific, as in assigning epistemic authority to a particular person, or to a particular newspaper.

A source may exert influence in numerous life domains, serving as a generalized epistemic authority; alternatively, it may influence only a specific area (for example, cardiology, statistics or auto-mechanics) wherein it is considered to possess valid knowledge. In the former role we may find priests, therapists, or parents, whereas in the latter we may find specialists in certain well defined fields. Individuals may differ widely in their reliance on various epistemic authorities and in their extent of such reliance across domains. Whereas some people may accept the judgment of a source (a rabbi a priest, a psychiatrist, or a teacher) on any issue in their lives, hence treating him/her as a

generalized epistemic authority, others may consult with a source with regard to more circumscribed issues related to the source's specific domain of competence, and to seek knowledge from other specific sources in other life-domains.

In counterdistinction to the dual process models that viewed sources' characteristics as somewhat inferior in persuasive impact to message arguments[2], in the present framework epistemic authority of some sources (e.g. religious prophet, parent, political leader, or the printed word) might be extremely powerful, so powerful in fact that it may override all else and exert a determinative influence on the individual's judgments, and correspondent behavior. In Kruglanski's (1989) lay epistemic theory, epistemic authority functions as a "stopping mechanism" analogous in its effects to the need for closure (Kruglanski, 2004; Kruglanski & Webster, 1996; Webster & Kruglanski, 1998): In the same way that a heightened need for cognitive closure may effect a "seizing and freezing" on a given judgment, so may a particularly high degree of epistemic authority conferred upon a source (e.g., an adored political leader, an admired scientist, or a revered religious pontiff). Thus, even though individuals' accuracy motivation may be high, and their cognitive resources ample, they may discontinue their epistemic search and instead accept (i.e., "seize and freeze" upon) the pronouncement of a high authority source, whose statements simply are perceived as beyond reasonable doubt. In its role of a "stopping mechanism," a source's authority plays, therefore, a motivational role in information processing determining the amount of energy the individual is prepared to devote to continued epistemic activity in a domain.

[2] In the ELM, for instance, persuasion accomplished via such peripheral cues as source expertise is assumed to be less persistent, less resistant to counterpersuasion, and less linked to behavior than persuasion based on message arguments; Similarly, in the HSM persuasion based on heuristics is assumed to afford lower confidence and to be resorted to when the "sufficiency threshold" for confidence is low.

Finally, whereas in prior treatments of source credibility effects, the discussion centered on the credibility of sources external to the self (cf. Chaiken, Liberman & Eagly, 1989; Hovland, Janis & Kelley, 1953; Kruglanski, & Thompson, 1999a,b; Petty & Cacioppo, 1986), i.e., of communicators whose messages one may be exposed to, the present theory considers the self as a particularly important target of epistemic authority assignments and investigates how these may change in the course of individuals' social-emotional development. In accordance with the foregoing analysis, our analytic framework focuses on (1) the unique developmental aspect of source effects, (2) assessment of stable individual differences in source effects, and (3) the role of self as a source of information.

Social development of epistemic authority. One way in which source authority is special relates to its inevitable developmental dimension. To the newborn baby, the world may well present a "buzzing confusion" to use William James' famous turn of phrase. Whereas perceptual clarity may be gaining in sharpness as a matter of physiological maturation, the development of conceptual knowledge may depend to a large extent on the child's adult caregivers, in most instance's its parents, and other family members that interpret for the child what different informational patterns may mean, and in what conceptual categories they should be apprehended. Indeed, developmental psychologists have long recognized (Erikson, 1950; Freud, A., 1965; Kagan, 1958, Ruble & Seidman, 1996; Spiegel, 1958; Staton, 1963; Winnicot, 1965) that the young child's world-knowledge is shaped by the various "socialization agents" or "significant others" with whom it is in frequent contact. It seems plausible to assume then, that for the young child these adult caregivers may represent the ultimate epistemic authority, whose views on

various matters are accepted as the indisputable truth. In the course of normal socio-cognitive development, the epistemic authority of the parents may wane, and that of other sources increase.

For instance, one's school-teachers are likely to be assigned some specific authority in their domains of competence. Thus a differentiation begins wherein the semi-absolute authority of one's caregivers is gradually replaced by a more distributed pattern of attributions in which different sources are relied on for different types of knowledge. In adolescence, for example, the peer group typically is assigned considerable epistemic authority. This may represent a way in which the child is beginning to assert her or his unique identity, independent of its parents. In other words, bestowing respect and admiration on figures similar to oneself (i.e., one's peers) could be a way of indirectly asserting one's own self-worth as a source of knowledge. More directly too, the self gradually gains in ascribed epistemic authority at least in some domains. One begins to trust one's ability to make sense of various types of information and to draw valid conclusions from the available evidence. A normally functioning adult may acquire a balanced mental representation of epistemic authorities in various regions of her or his life space, having developed good ideas about whom to trust with respect to what, when and how much. The development of such a representation may be affected and distorted by the individual's unique history of socialization. For instance, attachment theorists (see Mikulincer & Shaver, in press) have found that individuals with secure attachment tend to trust external sources (other people) more, than do individuals with anxious or avoidant attachment, and hence bestow them with higher epistemic authority (Collins & Read, 1990: Mikulincer, 1998). Moreover, individuals with avoidant attachment tend

toward what Bowlby (1988) has called "compulsive self reliance," that is, an exaggerated ascription of epistemic authority to the self (Mikulincer & Shaver, 2003).

As a consequence of their unique developmental course, as well as unique socialization and learning experiences, adult individuals may vary considerably in their distributive profiles of epistemic authority (i.e., in the epistemic authority they may assign to various sources). The shape of such distributive profiles may be determined by various informational and motivational factors. In other words, whereas the young infant may instinctively orient toward adult caregivers as epistemic authorities, the subsequent source differentiation is probably governed by the same informational and motivational factors that determine the formation of all beliefs (Kruglanski, 1989).

As far as information is concerned, sources may "prove" their knowledgeability in a domain in various ways, e.g. by making predictions and suggestions that pan out. Subsequently, trusted epistemic authorities may "confer authority" on other sources (as when a knowledgeable friend recommends an expert in a domain, e.g., a physician, a car-mechanic, or a professor). As for motivation, a source that gratifies some of the individual's needs may be perceived as capable of gratifying other needs as well, including the epistemic needs of knowledge formation. For instance, one might be motivated to view as an epistemic authority, and to accept the influence of, a caring parent, fostering a secure attachment (Bowlby, 1988) based on the desire to believe that a parent who wishes one well, is knowledgeable and right. For very different reasons, the seeking of approval, one may bestow epistemic authority upon a distant and uncaring parent based on the hope that such admiration will assure the parent's attention and good will. Though these two motivations might function similarly in the bestowal of authority

on one's parents, they may markedly differ with regard to the development of one's own authority. The affection of a caring parent may be perceived as unconditional, allowing the child to explore its environment and develop its own sense of epistemic authority. By contrast, the (hoped for) attention of a distant parent may appear as contingent on one's adoration of the parent; this may encourage the clinging to the parents' ascribed authority and a reluctance to develop one's own epistemic independence, potentially threatening the loss of the parents' approval.

Further determinants of epistemic authority assisgnments. Beyond aspects of one's socio-emotional development, various motivational and cognitive factors may play a role in shaping the profile of one's epistemic authorities. For instance, the need for cognitive closure (Kruglanski & Webster, 1996; Webster & Kruglanski, 1998) may prompt one to differentiate sharply among epistemic authorities assigned to various sources. Accordingly, persons with a high need for closure may attribute either a more extremely high or a more extremely low epistemic authority to a given source than persons with a low need for closure.

For reasons of closure too, one might confer a higher degree of epistemic authority on individuals whose opinions are similar to one's own, allowing one to preserve one's closure (Kruglanski & Webster, 1996). Such relations might be complicated by one's view of oneself as an epistemic authority: If one's self perception as an epistemic authority was high, agreement from another would be self-validating, in addition to safeguarding closure. This would render agreement highly motivationally desirable increasing the likelihood of conferring a high degree of epistemic authority on the agreeing other. By contrast, if one's self perception as an epistemic authority was low,

agreement from another would tend to invalidate one's (negative) self concept while safeguarding one's closure, hence possibly evoking ambivalence and a resistance to conferring a high epistemic authority on the agreeing other.

Finally, because motivations as well as information can be induced situationally, the perception of epistemic authority too may vary across situations. For instance, source statements that the recipient perceived as intelligent and compelling may elicit ascriptions of higher epistemic authority than statements perceived as less intelligent or compelling (Erb et al., 2003). Similarly, momentarily induced motivations may affect the assignments of epistemic authority. For instance, momentarily induced need for cognitive closure (DeGrada et al., 1999) may increase the differentiation between sources in terms of perceived epistemic authority, correspondingly increasing the influence of some sources and lowering the influence of other sources. As with other beliefs then, the assignment of epistemic authority may involve the joint influence of informational and motivational factors. Thus, the mere presence of relevant information may not suffice to produce an impression of epistemic authority. In addition to the information being "given," one would need to be motivated to "take it," that is, to use that information to form such an impression (Mazliach-Liberman, 2003**)**.

Thus, the construct of epistemic authority has both nonunique and unique aspects. On the nonunique side, epistemic authority ascribed to a source represents a meta-cognitive belief about the degree to which it can be relied on for veridical opinions about some aspects of the world. In that sense, epistemic authority beliefs are like all other beliefs both in terms of the ways in which they are formed (based on the impact of motivational and informational conditions of their construction) and in terms of the ways

they function (Erb et al., 2003) to afford the drawing of inferences and the arrival at conclusions.

Nonetheless, epistemic authority beliefs are in an important sense quite special and unlike other possible beliefs. That is true because they are a quintessential part and parcel of our social nature. Epistemically, they are inextricably tied to our informational dependence on other people, and to the relative independence of others we may acquire while growing up. Epistemic authority beliefs are developmentally fundamental, and constitute part and parcel of the infant's fundamental orientation toward its adult caregivers. And in adult individuals a differentiated hierarchy of epistemic authorities assigned to various sources may constitute a stable system of epistemic guides indispensable to people's self regulation toward their objectives. Thus, the topic of epistemic authority may be fruitfully approached from developmental, differential, as well as situational perspectives.

Epistemic authority effects on information processing and decision making. We are presently assuming that an assessment of the epistemic authority of sources present in a given situation constitutes a preliminary phase in all information processing. For example in a psychological experiment, by delivering the instructions to participants the experimenter is implying that the latter possess sufficient epistemic authority to make sense of the instructions. By contrast, during a medical consultation among physicians the patient is usually left out of the "loop," the implication being that he or she does not have sufficient epistemic authority to be part of the conversation. Subsequently, the patient's primary physician may often present a "watered down" version of the conversation to the patient, that the patient presumably has sufficient self ascribed epistemic authority to

evaluate. We are assuming that once the individual has determined (implicitly) who in a given situation has the dominant epistemic authority for making sense of "the information given," this source is (1) sought out and (2) attended to. Furthermore, (3) its conclusions tend to be accepted, resulting in (4) considerable epistemic confidence on part of the recipient, and (5) leading to behavioral decisions consistent with the source's recommendations.

In the remainder of this chapter we describe some initial empirical research related to our conceptual analysis. A major innovative aspect of our proposal is that a distributional profile of epistemic authorities across different knowledge domains can vary developmentally as well as individually, and that it can pertain to the self as well as to others. Furthermore, because epistemic authority beliefs may determine the influence that various sources exert on the individuals' judgment and decisions, mapping out such beliefs in a specific context can be of considerable applied significance (e.g., in the realms of education, politics, or economics). In what follows we consider some ways in which these notions have been studied thus far and the evidence that has accumulated for the utility of the epistemic authority notion as a social psychological construct.

Empirical Research In the Epistemic Authority Framework

Developmental Differences: Who Knows Best?

Prior developmental work (e.g., Berndt, 1979; Floyd & South, 1972; Hartup, 1983; Wintre, Hicks, McVey & Fox, 1988) has primarily focused on confronting peers' versus parents' influence, and did not use direct measures of ascribed epistemic authority. Our own research based on specific such measures, included a more varied array of potential sources including the Self. In an early study, Raviv, Bar-Tal, Raviv and

Houminer (1990) assessed children's attribution of epistemic authority to their mothers, fathers, teachers and friends. They investigated kindergarten children (4-5 year olds), first graders (6-7 years old), and third graders (8-9 years old). To that end they used a questionnaire in a semi-structured interview. In the first phase of questionnaire construction, researchers attempted to determine what verb best represents to children the concept of "epistemic authority." Preliminary studies related to this research revealed that kindergarten children do not understand the meaning of the phrase "to rely on," that they tend to invest the verb "to trust" with moral significance, and that they respond to the question "whom do you ask?" on the basis of the source's availability. It was furthermore determined that the question "who knows best" avoids these pitfalls and expresses most accurately the perception of epistemic authority. Consequently, the epistemic authority of each of the four sources was evaluated in seven knowledge areas, again gleaned on the basis of extensive pretests. These areas were: (1) pastime (e.g., tapped in items such as "who knows best, in your opinion, what games is it fun to be playing in the afternoon?"), (2) social relations (e.g., "who knows best, in your opinion, whether it you should be friends with a certain boy or girl?"), (3) rules and laws (e.g., "who knows best, in your opinion, things that are allowed and forbidden to do?"), (4) personal feelings (e.g., "who knows best, in your opinion, what you should do when you are sad or when you are insulted?"), (5) science (e.g,"who knows best, in your opinion, all sorts of interesting things, such as why the sun disappears at night, or why it is cold and rainy in the winter?"), (6**)** future planning (e.g. "who knows best, in your opinion, how to help you to decide what you will be when you grow up?"), and (7) physical appearance (e.g., "who

knows best, in your opinion, what clothes you should wear when you want to get dressed up?"). Reponses were given on a 4-point scale.

Several significant trends appeared in these data, yielding the following pattern of interest: during childhood (i.e., during the ages 4-10), (a) the perception of parents as epistemic authorities remains relatively stable, with decreases in a few knowledge areas, (b) the perception of the teacher as an epistemic authority remains stable with an increase in the area of science, (c) the perceived epistemic authority of friends increases in the social domain. Detailed results for the domains of Pastime and Science are presented in Figure 1A and Figure 1B.

Figure 1A and 1B here

Raviv et al. (1990) also looked at the differentiation in perceived epistemic authority of various sources across domains of knowledge and as a function of age. Four differentiation scores were defined for each participant such that for each source the standard deviation was computed between rankings given this source in the seven knowledge areas. The results indicated that, across the age-groups, the differentiation in epistemic authority assigned to Father and Mother was less than that assigned to Teachers and Friends. That is, the perception of teachers and friends varied more as a function of knowledge areas than the perception of parents. The children selected teachers and friends as epistemic authorities in certain knowledge areas only, whereas the parents were perceived more as overall authorities across domains, possibly as a function of continued material dependence on the parents inducing a motivation to view them as all powerful in the epistemic, and probably also in other realms.

Two studies investigated the changes in perception of epistemic authorities between the ages 9-18 (Bar-Tal, et al., 1991; Raviv, Bar-Tal, Raviv, & Peleg, 1990). Raviv et al. (1990) investigated three groups of children/adolescents, fourth graders (ages 9-10), eighth graders (ages 13-14) and twelfth graders (ages 17-18). As in the research described earlier, the targeted sources consisted of mothers, fathers, teachers, and friends. Their epistemic authority was evaluated separately in regards to the following nine knowledge areas: (1) school studies, (2) politics, (3) science, (4) pastime, (5) physical appearance, (6) social relations, (7) future planning, (8) values, and (9) personal feelings. The opening question regarding each source was, for instance, "To what extent do you rely[3], that is, you believe and trust, what your mother tells you on the following subjects?" The same question was presented with reference to "your father," "your teacher," and "your friends". Then, for each source, nine questions followed, pertaining to each of the nine knowledge domains, for instance, "To what extent do you rely on the things your mother says regarding your school studies (for example, preparation of homework, or how to study and prepare for examinations?" Answers were recorded on a 5-point scale anchored at the ends with (1) "do not rely" and (5) "rely" with the intermediate points labeled as (2) "generally do not rely," (3) "sometimes rely and sometimes not," and (4) "generally do not rely."

Based on appropriate factor analyses, the original nine areas were integrated into three general domains of general interest to investigators of adolescent behavior (e.g., Sebald, 1986) namely those of Formal Knowledge (including the specific areas of School Studies, Politics, and Science), Social Knowledge (including Pastime, Physical

[3] The term "rely on" was used after a pretest had indicated that youngsters of the ages investigated took the phrase "to rely on someone's knowledge" to mean "to believe in" and "to trust," hence in present terms to regard as an epistemic authority.

Appearance, and Social Relations) and General Life Knowledge (including the specific areas of Future Planning, Values, Personal Feelings and General Knowledge).

The results showed that for all the sources, and across all three domains the 4th graders assigned greater epistemic authority to sources than the older two age-groups. The only exception to this trend existed for the Social Knowledge domain of Friends, where no significant differences obtained across the age-groups. It is also of interest that in the domains of Formal Knowledge and General Life Knowledge adolescents continued to consider one or both parents as the single most important epistemic authority. For example, in the domain of Formal Knowledge, and across the three age groups, Father received higher scores than Mother and Teachers, both of whom received higher scores than Friends (see Figure 2A). In the 12th Grade, Teachers received a higher score on Formal Knowledge than Mother, who in turn was evaluated higher than Friends. In the realm of General Knowledge too, it appears that Father and Mother remain the most important epistemic authorities throughout adolescence (see also Hunter, 1985). As for Friends, they received the highest relative scores in the Social Knowledge domain for all the three age groups. Also, across the age groups Teachers received their highest score in the Formal Knowledge domain, followed by the General Knowledge domain, and the Social Knowledge domain where their relative scores were the lowest.

Figures 2A, 2B, 2C here

In the same study, Raviv et al. (1990) investigated the differentiation in epistemic authority assigned each source across domains and as a function of age. A differentiation score in this case was defined as the standard deviation of evaluations given to the nine content categories with regard to each source. The overall differentiation differed

significantly by source, the Teacher being the most differentiated of all the four sources considered. Furthermore, the order of source-differentiation varied with age (see Figure 3). Thus, for the 4th graders, the order of differentiation from highest to lowest was Teachers, Friends, Father, and Mother. The order for the 8th graders was Teachers, Father, Friends, and Mother, and for the 12th graders it was Teachers, Father, Mother, and Friends. These findings imply that whereas for the 4th graders, Parents were perceived as sources of generalized epistemic authority, for the 12th graders, such generalized authority was reserved for Friends.

Figure 3 here

Four-graders (ages 9-10), eight graders (ages 13-14), and twelfth graders (ages 17-18) were also investigated in research by Bar-Tal, Raviv, Raviv and Brosh (1991). This study went beyond the Raviv et al. (1990) research in two important respects: (1) It included the self among the investigated knowledge sources, phrased in terms of questions with reference to "Myself," and (2) it tapped participants stated reasons for epistemic-authority assignments. The main result of interest was that in the 8th and 12th grades the importance of Myself as epistemic authority was greater than the epistemic importance of all the other sources (see Figure 4). By contrast, in the fourth grade, Myself was not assigned a higher epistemic authority than Mother and Father. Overall, whereas the epistemic authority of both the Father and the Mother declines across the age-groups, the epistemic authority assigned to Myself significantly increases.

Figure 4 here

The perception of Friend as an epistemic authority increased with age in the domain of School Work, Physical Appearance, and Personal Feelings. The perception of

Teacher as an epistemic authority increased with age in the domain of School Work, but decreased in the domain of Science. In the latter domain two new sources appeared, Expert and Media which become especially important in the 12th grade.

As for the stated reasons for epistemic authority assignments, Father, Teacher and Media were selected as epistemic authorities mainly because of their Knowledge, Myself was selected mainly because of Familiarity (the source knows the person, his/her taste, and what he/she likes or wants), Mother was selected mainly because of Helpfulness (the source wants to help, wants to benefit and is empathetic) and Friend was selected because of Helpfulness, Knowledge and Similarity (the source is similar to the participant in traits, attitudes or age). It is noteworthy that these reasons are classifiable into those tapping the source's motivation to provide valid knowledge (Helpfulness) and its ability to do so in terms of having the relevant background knowledge, and evaluative criteria (Knowledge, Familiarity, and Similarity) and more generally recall the distinction between "trustworthiness" and "expertise" drawn by Hovland and Weiss (1951).

Pop Idols as Epistemic Authorities

The work by Bar-Tal et al. (1991) demonstrates the emergence of novel sources of epistemic authority in the course of social development, such as of Experts and of Media. Whereas Experts and Media may constitute stable sources of epistemic authority throughout one's adult life, other novel epistemic sources may be more transient in nature, their waxing and waning reflecting the vicissitudes of shifting developmental phases. An intriguing case of such a transiency is a study of the epistemic authority assigned to pop singers (Raviv, Bar-Tal, Raviv & Ben-Horin, 1996). Participants, male and female adolescents from three age-groups (10-11, 13-14, and 16-17) were asked to

list in order of importance three pop singers they idolized the most. Then they proceeded to answer a variety of questions concerning the singer who represented their first choice. Among others, participants answered questions concerning their potential reliance on the singer's recommendations and opinions in (1) Personal Matters (including the domains of pastime, future planning, physical appearance, social relations, personal feelings and general reliance), and (2) Overall knowledge and values (including school studies, politics, values and science).

Figure 5 here

This research yielded three findings of interest: (1) Reliance on the pop-idol in regard to personal matters is considerably greater than reliance with regard to overall knowledge and values, (2) it declines with age, being most pronounced in the 10-11 age group, and lower subsequently, and (3) it is more prevalent among girls than among boys, particularly in the early age-group (see Figure 5). The authors conclude that "…during late childhood and early adolescence the phenomenon of pop star idols reaches its maximum intensity. In this period, boys and girls begin separation from their parents and start to join the youth culture, forming their own peer group. This is the beginning of the maturation process during which adolescents establish their self-identity and independence. At this time they look for other identification figures than their parents. The media, especially television radio and youth magazines, provide them with alternative objects of admiration, among them pop singers. Through these channels they are not only exposed to melodies and lyrics, but also to information that serves as a basis for idolization…" (Raviv et al., 1996, pp 664-645).

Summary

Studies reviewed above attest to the utility of the epistemic authority construct as a "window" to understanding the course of social development. In general, the results show a developmental trend involving a decline in authority assigned to the primary caregivers, and an increase in the epistemic authority attributed to the self. Evidenced also is a developmental trend toward differentiation and specificity. Whereas in early childhood the list of epistemic authorities is limited and those authorities are rather general across domains of knowledge, with age individuals begin to assign different sources to different knowledge domains, and add novel sources to their "list."

However interesting and suggestive, studies considered thus far are limited in two respects. First, the upper age limit they tapped was that of late adolescence, and they did not investigate epistemic authority assignments by adult individuals. Second, and perhaps more importantly,they pertained exclusively to perceptions of epistemic authority and did not address the cognitive, and behavioral impact that epistemic authority assignments may exert on perceivers. Both concerns were addressed in research described below.

Individual Differences in the Distribution of Epistemic Authority Assignments Across Sources

An early study by Bar (1983) devised a Hierarchy of Epistemic Authorities Test designed to investigate the epistemic authority assigned by Israeli college students to various sources. Participants answered 33 hypothetical questions regarding the following seven different life domains identified by Jourard (1959); life style, social activities, interpersonal relations, child education, work, finances, and mental or physical problems. Regarding each question participants were required to rank the following eight sources of authority (derived from the appropriate pilot research) in terms of their reliance upon

them for advice: (1) majority opinion; (2) the person's own reference group**;** (3) a domain specific expert**;** (4) a general expert; (5) self authority – logical; (6) self authority – sensory; (7) self authority – affective and (8) self authority – intuitive. Participants also rated the first ranked authority in regard to each question on a scale from 1 to 10 regarding the degree to which they relied on its recommendations in each domain. Bar's (1983) test had a good reliability (Cronbach αs for the different sources of authority ranged from .82 to .94). It also exhibited considerable variability in how different persons distributed their assignment of epistemic authority across different sources. This was true both when aggregating across domains, as well as within domains.

Bar (1983) found intriguing gender differences in epistemic authority assignments. Specifically, in domains prototypically classified as masculine (such as work and finances) women viewed their peer group as a more dominant epistemic authority than did men, whereas in domains prototypically classified as feminine (social life, interpersonal relations, children's education) men endowed their peer group with greater epistemic authority than did women. Apparently, where one's own epistemic authority is low (as was the case for men in the feminine domains, and for women in masculine domains) one's reference group gains in epistemic dominance as compared with domains where one's self ascribed epistemic authority is high.

But the main concern in Bar's (1983) research was whether assigned epistemic authority predicted behavior. To that end she had participants engage in an Information Purchasing Test wherein participants' role was to "purchase" information from six sources in order to reach a correct decision regarding a presented problem. The assumption was that the greater the epistemic authority assigned to a given source, the

more resources participants should be willing to spend in order to purchase information from that source. The results indeed demonstrated that the Hierarchy of Epistemic Authorities Test was highly successful in predicting participants' purchasing behavior. In all the seven domains investigated, participants were willing to pay more (in hypothetical money represented by chips) for information from their highest domain-specific authority than for information from the second highest (or any other) authority.

Bar (1999, Study 1) later abbreviated and computerized the "Hierarchy of Epistemic Authorities Test" and tested its implications in several subsequent studies. The Cronbach αs in this later research ranged between .72 and .87. In her first experiment, participants chose among eight products in each of four domains, namely dieting, cars, hair shampoo, and dryers. Participants were first instructed to open windows corresponding to the eight epistemic authorities in order to discover the corresponding authority's recommendation with regard to one of the products. Participants were allowed to open as many windows as they felt were needed for a confident choice of the highest quality product, and they subsequently did so for their second highest quality product. It was found that participants tended overwhelmingly to open first the window corresponding to their dominant epistemic authority, and to choose the product recommended by that authority. Whereas by chance alone no more than 12.5% of the participants should open a given window, and/or choose its recommended product, the corresponding figures obtained in Bar's study were in the 40%-60% (see Figure 6).

Figure 6 here

It was also found that the choice of the "highest quality" product was determined by the dominant epistemic authority to a greater extent than the choice of the second most

desirable product. Participants also expressed significantly greater confidence in their product-choice when it was recommended by a dominant versus a non dominant epistemic authority (i.e., an epistemic authority other than that first ranked one. Finally, for participants who chose the product recommended by their dominant epistemic authority—those who rated that authority as "strong" (that is, in the upper third of the ratings distribution) expressed greater confidence in their choice than those who rated that authority as "weak" (lower third of the distribution).

Epistemic authority or heuristic cue? The above main effects of epistemic authority were replicated and extended in Bar's (1999, Study 2) second study that superimposed on the original procedures, orthogonal manipulations of time pressure (high versus low) and evaluation apprehension (high versus low). Specifically, half the participants were given 30 seconds to complete each decision problem whereas the remaining half were given 10 minutes to do so. Similarly, half the participants were led to believe that the computer would record all of their choices in order to assess their decision making ability, and that feedback to that effect would be provided them at the end of the experiment. The remaining participants were led to believe that the computer program was still in its testing phase and that their responses would not be recorded or evaluated in any way. Just as in the first study, it was found that participants tended to first open the window pertaining to their dominant (versus non-dominant) epistemic authority, that they tended to do so to a greater extent if their dominant epistemic authority was rated as "strong" versus "weak," that they were more confident in their decisions if those were based on the recommendations of dominant (vs. a non-dominant) epistemic authority, and that this was true to a greater extent where the dominant

epistemic authority was rated as "strong" versus "weak." Moreover, participants tended to spend more time on information contained in a window belonging to their dominant (vs. non-dominant) epistemic authority. Finally, participants whose first window corresponded to their dominant epistemic authority tended to open significantly fewer windows subsequently, and to do so to an even greater extent if their dominant epistemic authority was rated as "strong" versus "weak." These findings held even when controlling for the amount of time participants spent on their first window, contrary to the alternative hypothesis that these findings were due to the fact that spending a great deal of time on the first window simply did not leave enough time for subsequent windows. This suggests that in addition to the "seizing" process affected by the dominant epistemic authority, information provided by such an authority tends to induce a "freezing" on its recommendations so that subsequent information search is deemed less necessary and hence it is curtailed (Kruglanski & Webster, 1996).

The manipulations of time pressure and accuracy referred to earlier were specifically intended to elucidate the nature of epistemic authority as a social psychological construct. One possibility to consider is that this particular construct may represent a peripheral "cue" or a "heuristic," reminiscent of the way source-characteristics were treated in much persuasion research (cf. Petty & Cacioppo, 1986; Chaiken, Liberman & Eagly, 1989). If so, one might assume that the impact of the dominant epistemic authority would be reduced under high accuracy instructions, representing a high degree of processing motivation, and, increased under time pressure, known to induce a high need for cognitive closure. In other words, if deferring to one's dominant epistemic authority represents primarily a "quick and easy" though a tad less

reliable, way of forming judgments (and making the corresponding decisions) and if one is less inclined to choose such peripheral (or heuristic) processing when the elaboration likelihood is high (Petty and Cacioppo, 1986), then the influence of the dominant epistemic authority should be more pronounced under time pressure and in the absence of the accuracy instructions (representing a low elaboration likelihood) than in their presence. Similarly, if time pressure lowers the "elaboration likelihood," individuals should be more likely to rely on their dominant epistemic authority in the presence (vs. absence) of time pressure. In other words, in the absence of time-pressure and/or under accuracy instructions—individuals should open the informational windows relatively leisurely, and process the information that they contained more extensively.

This, however, did not happen. Instead, the epistemic authority effects (on number of informational windows opened first and on confidence in recommendations of a given source) held sway across variations in time pressure and in accuracy concerns (see Figures 7 and 8). In this connection, the fact that participants had higher confidence when their judgments were based on the recommendations of their dominant epistemic authority also questions the notion that source-expertise functions merely as a heuristic (as in the HSM) which generally affords a low judgmental confidence (appropriate only when the "sufficiency threshold" is low). Apparently, the degrees of judgmental confidence conferred by sources may vary in accordance with their perceived authority, just as the degree of confidence afforded by message arguments may depend on their perceived cogency (cf. Kruglanski & Thompson, 1999a, b; Erb et al., 2003). Thus, some sources (i.e., ones assigned high epistemic authority) might be able to bestow higher degrees of confidence on judgments based on their recommendations than some message

arguments (i.e., those of relatively low cogency), whereas other sources (i.e., ones assigned low epistemic authority) may bestow lower degrees of confidence than other message arguments (i.e., those of relatively high cogency). These findings suggest that one's dominant epistemic authority may represent a trusted source of knowledge, more so, in some cases than one's own self ascribed authority in a domain (that was non-dominant for numerous participants in various domains). Hence, the dominant authority tends to be relied upon regardless of situational constraints such as those having to do with the amount of time at one's disposal and the pressure to be accurate.

Figures 7 and 8 here

In her third experiment, Bar (1999, Study 3) adopted a continuous measure of influence exerted by various epistemic authorities. Participants were presented with numerical estimates ascribed to various sources, e.g., "according to most people, a dryer activated twice a week is likely to last 12 years," or, "according to a mechanical expert, a gas driven engine produces 300 sparks per second," Participants had to form their own judgment on the issue addressed in the statement. It was found that participants' judgments were "anchored" to a significantly greater extent on judgments of the source if it represented their dominant versus non-dominant authority, and when their dominant epistemic authority was rated as strong versus weak. Also, participants judgmental latencies were significantly briefer when the recommending source was a dominant (vs. non dominant) epistemic authority and when the recommending dominant source was rated as "strong" vs. "weak" in epistemic authority.

Summary

Bar's (1983; 1999) studies reviewed above attest that the hierarchy of epistemic authorities matters. Individuals apparently differ systematically in their distributional profiles of epistemic authority assigned to various sources, and these differences, in turn, are related systematically to individuals' search for, and use of, information. Specifically, this research shows that individuals first turn to information provided by sources whom they regard as highest (vs. lower) in relative epistemic authority, they process such information more extensively, derive from it greater confidence and tend more to act in accordance with its perceived implications.

Differentiation Between Internal and External Epistemic Authorities

A particularly important aspect of the epistemic authority construct is its differentiation that occurs over the course of socialization and development. And a particularly interesting aspect of such a differentiation is the distinction between one's own self-ascribed authority and the authority ascribed to external agents. One implication of such a differentiation is that individuals for whom external authority is dominant would be more sensitive to external cues in general, more so than individuals for whom the dominant epistemic authority is internal. Specifically, individuals for whom external (vs. internal) authority is dominant may tend more to direct their attention externally and be particularly vigilant to changes in the external environment. Two studies provide evidence in support of this possibility.

In Bar's (1999, Study 3) research with numerical anchors, she again orthogonally manipulated time pressure and accuracy instructions. And again, the dominant epistemic authority exerted strong main effects and did not interact with the time pressure and accuracy variables. However, there appeared an interesting difference between

participants whose dominant epistemic authority was external versus those whose authority was internal, or self ascribed. Specifically, under high time pressure and in the absence of accuracy instructions (i.e., under situational conditions known to enhance the need for cognitive closure) those with an external epistemic authority tended to bring judgments significantly closer to the anchors mentioned irrespective of the source they were mentioned by. In other words, participants assigning a dominant authority to external sources tended more to "freeze" on judgments of the source, that is, behave like high need for closure persons, than individuals whose dominant epistemic authority was internal (!). It appears then, that individuals for whom the dominant epistemic authority is external (vs. internal) are more affected by external cues, at least those known to induce a heightened need for closure (Kruglanski & Webster, 1996).

A conceptually similar effect appeared in Bar's (1999) fourth study using an entirely different procedure based on Payne's (1976) information board. On this particular board, listed on the Y axis are the various choice alternatives (in this particular case, various products) and on the X axis the various features of those alternatives. It is generally assumed that opening windows along the x-axis represents a conflict prone search strategy (because the various features represent divergent criteria, e.g., cost vs. durability vs. appearance vs. design) on which the different alternatives can be judged. On the other hand, opening windows along the Y axis represent a simpler, less conflictual strategy—because one would simply choose for each feature the one alternative highest on that feature. We know that under high need for closure individuals are driven by a sense of urgency and immediacy, and they try to avoid cognitive conflicts that necessitate lengthy deliberations (Kruglanski, 2004; Kruglanski & Webster, 1996). Bar (1999, Study

4) found that participants with an external (vs. internal) epistemic authority, under closure-prompting situational conditions (high time pressure, no accuracy instructions) opted to a significantly greater extent for the simpler strategy (opening windows along the Y axis), i.e., they seemed to be more responsive to situational cues suggesting closure. Just like in the prior study then, individuals with dominant external epistemic authority appeared to be more sensitive to situational or external cues (implying the need for closure) than individuals with a dominant internal authority (see Figure 9).

Figure 9 here

Effects of Self Ascribed Epistemic Authority

Self ascribed epistemic authority and external information search under need for closure. A major unique aspect of the epistemic authority construct is that it treats analogously external sources of information and the self. Indeed, several recent studies looked at informational effects as a function of the self ascribed epistemic authority. In one such study, Pierro and Mannetti (2004) measured the strength of individuals' self ascribed epistemic authority in the specialized domain of cell phones. To that end, they constructed a 13-item scale including questions such as "I truly have considerable knowledge about different types of cell phones," "I can say a great many things about technical specs of different cell phones," "I can offer people useful advice regarding the purchase of a cell phone," etc. Reliability of this measure was quite high (Cronbach α=.91). Pierro and Mannetti (2004) also assessed their participants' dispositional need for cognitive closure using the Italian version of Webster and Kruglanski's (1994) Need for Closure Scale. The main dependent variable of interest was participants' readiness to search for information from external sources in case they entertained the possibility of

purchasing a cell phone. This was measured, again, via several pertinent items, e.g., "If I were to buy a cell phone I would seek information from a large number of sources," "If I were to buy a cell phone, I would visit a large number of retailers," "If I were to buy a cell phone, I would seek advice from friends, relatives, and neighbors," etc. The Cronbach α of this scale was .83. It was found that the greater the individuals' self ascribed epistemic authority in a domain, the less external information they indicated they would seek.

This was not at all surprising. After all, having high self ascribed epistemic authority in a domain is nearly tantamount to having less need of advice from others. What was more interesting, however, is that the tendency to seek such external information was moderated by the need for cognitive closure. For individuals with a low self ascribed epistemic authority in the specific domain of cell phones – the higher their need for closure, the stronger their tendency to engage in an external information search. By contrast, for individuals with a high self ascribed epistemic authority in this domain - the higher their need for closure, the lower their tendency to engage in an external search, and presumably the greater their tendency to rely on their own experience and expertise (see Figure 10). In other words, under the pressure for closure individuals seem to adhere particularly strongly to their dominant epistemic authority in a domain, relying on the source they trust the most.

Figure 10 here

These results demonstrate, additionally, that source-authority doesn't constitute a mere peripheral cue or heuristic used as a "quick and ready" manner for reaching judgments when the elaboration likelihood is low (Petty & Cacioppo, 1986), but rather

constitutes a factor affecting the direction of the informational search. That is, significance of the source's perceived epistemic authority is not that this information is necessarily easy to process (for conditions where it may be difficult to process see Kruglanski and Thompson, 1999a, b), but rather that it represents the best source of information to be processed.

Informational impact as a function of a self ascribed epistemic authority. The degree of one's self ascribed epistemic authority should determine the kind of information likely to impact an individual's judgments and decisions. Pierro and Mannetti (2004, Study 2) examined the degree to which more versus less relevant product information would be recognized as such and would impact attitudes toward the product by individuals with different degrees of self ascribed epistemic authority in a domain. Participants, students at the University of Rome, "La Sapienza," filled out a scale of self ascribed epistemic authority in the domain of cell phones as described earlier. Then, in the second research phase administered a month later they were presented with product information about a cell phone of Brand X that a well known manufacturer was allegedly planning to introduce into the market, and that a market research firm was investigating.

Participants were then presented with a description of this telephone in comparison with its two competitors, Brand A and Brand B. In all cases Brand X was portrayed as superior to those competing brands, but the features on which it was portrayed as superior varied. Half the participants read a description in which the comparison features of X with A and B were on dimensions found (in a pretest conducted with a random sample of students) to be highly relevant to the overall quality of a cell phone. These features included: (1) aesthetic quality of the design, (2) number of

available functions, and (3) capacity to send text and video messages (ostensibly lacking in A and B), (4) an integrated dictionary for MMS writing of messages (lacking in A and B). The remaining half of the participants read a description in which X was compared with A and B on features rated by pretest participants as largely irrelevant to the overall quality of the phone. These included: (1) a color display (whereas A and B had only a black and white display, X had a color display), (2) an additional keyboard (present in X and lacking in A and B), (3) a special cover for the keyboard (present in X but lacking in A and B) and (4) an easier to use menu. It was found that participants with a high self ascribed epistemic authority in the domain of cell phones were more capable than their counterparts of appropriately discriminating between the less and the more relevant telephone features. More importantly, they were more impacted in their ultimate attitudes toward Brand X than their low self authority counterparts by its superiority on the relevant versus the irrelevant features (see Figure 11).

The above findings suggest that one's self-perception of epistemic authority may be veridical, and be related to actual expertise. A self ascription of a low epistemic authority may mean that one is truly unable to discern what is relevant in a given domain. Whereas this is not particularly surprising a more interesting implication is that persons with a low (vs. high) self ascribed epistemic authority may be more swayed in their attitudes and opinions by irrelevant features and exogenous arguments. Evidence consistent with this possibility was provided by Ellis (1996).

Figure 11 here

Persuasion by exogenous features. Imagine a personnel manager who, in order to persuade a promising potential candidate to take the job, offers her or him a trip abroad,

or a fancy car. This manager may be said to "decorate" the job with exogenous features not really relevant to the job's contents. Such tactics are often used in other life domains as well. For instance, a caring mother might try to persuade her child to eat its meal by using colorful plates adorned with funny cartoons, and/or attractive, animal-shaped, eating utensils. A student might try to compensate for a lack of original ideas in a composition by an impeccably neat handwriting and lovely drawings, etc.

Ellis (1996) hypothesized that such exogeneous characteristics of the attitude object are likely to exert greater persuasive impact on individuals whose self-ascribed epistemic authority in a domain is low versus high. In a study designed to investigate this issue, senior master's students at the organizational behavior program at the Faculty of Management at Tel-Aviv University, and about to enter the job market, were asked to express their opinion regarding one of two job offers: that of a human resource manager and that of an organizational consultant. Previously, these participants responded to a questionnaire designed to assess their self ascribed epistemic authority in one of these two domains. For instance, one of the 26 items in the organizational domain questionnaire stated: "The decision has been made to establish a professional team in your organization to help workers in distress. Do you believe that you can be one of the team members?" Another item stated "To what extent can one rely on your knowledge of management-worker bargaining?" Answers were recorded on a 5-point scale with the response alternatives labeled appropriately for each item, e.g., "absolutely yes"=1, and "absolutely no"=5 for the first item and "to a very large extent"=1, and "to a very slight extent"=5 for the second item, respectively. The Cronbach α for this scale was .92.

Thus, one of the 22 items in the personnel management questionnaire read "The personnel manager in a big organization has decided to establish a special team to develop and monitor career paths. To what extent do you think that you can be a member of this professional team?" Another item stated "An industrial manager is having some difficulties in selecting good criteria for middle-level manager promotion. To what extent do you believe you could help him solve his problems?" Answers were again recorded on appropriate 5-point scales, and the Cronbach α for this scale was .90.

The self-ascribed epistemic authority questionnaire (SAEA) was administered at each participant's home. Subsequent to a completion of this questionnaire by the participant the researcher said that he was also working for a "Student Vocational Guidance Service" and that he was conducting a survey on "how job offers were perceived by candidates." He further stated that because he knew that he would be meeting organizational behavior students about to graduate, he had brought with him a real and actually available (or "hot") job offer. He then asked the participant whether he or she would like to look it over with an eye of possibly taking the job. Not surprisingly, all participants agreed to do so. A description of the job requirements was attached to each of the positions presented. In order to reach a decision regarding the position, one of the versions included information endogenous to the position, whereas the other included both endogenous and exogenous features. The job content characteristics for each job were selected to describe the central aspects of the relevant position. For the organizational consultant's position these included: Individual consulting for managers, team building, and leading sensitivity training workshops. For the personnel manager's position these included personnel recruitment, selection and assessment, and monitoring

career paths. The job context features included a company car, an executive club membership, spacious office, etc.

The results demonstrated that participants with a low self ascribed epistemic authority invested more effort in processing exogenous information in their attempt to reach a decision. Additionally, they retained the irrelevant information better and perceived the position as more professional than did participants with a higher degree of self-epistemic authority. Those participants with a higher level of self-epistemic authority needed more time to process information regarding only those characteristics that were relevant to the position and retained this information better than the irrelevant information. Most importantly, in the condition where only job-endogenous features were presented, individuals' SAEA was positively and significantly correlated with positive attitudes to the job-offer. This correlation was significantly lowered (and rendered non significant) in conditions where both job content and job context features were presented. These findings suggest that individuals with a high SAEA base their attitudes on job endogenous features, whereas those with a low SAEA base them on job exogenous features. The pattern of means shown in Figure 12 in fact demonstrates that (across the two job offers) for high SAEA participants (above the median of the SAEA score distribution) addition of attractive job-context features tended to lower these individuals' positive attitudes toward the job offers, whereas for low SAEA participants addition of those features tended to enhance their attitudes to the job offers.

Figure 12 here

Summary

Findings described above attest to major differences in information processing of individuals with high levels of self ascribed epistemic authority versus individuals with low levels of self ascribed epistemic authority. These differences are reflected in processing-duration, memory for endogenous and exogenous information, as well as in the ability to discern, and be appropriately impacted by, more versus less relevant information.

Self Ascribed Epistemic Authority and Learning from Experience

Among the more interesting implications of the concept of epistemic authority is the phenomenon of learning from experience. It will be noted that the concept of "experience" has long been privileged in psychological theory. The use of experiential learning in training and education has been inspired by John Dewey's (1916, 1958) instructional philosophy, Carl Rogers' (1951, 1967) person centered approach to therapy and by humanistic psychology more generally (e.g., Shafer, 1978). In social psychology, Fazio and Zanna (1981) have suggested that attitudes acquired via direct experience with the attitude object are the strongest, and are most tightly related to behavior. Yet, these latter authors also hinted at the possibility of moderators that may qualify the power of experience to mould attitudes. As they put it, "An attitude formed by indirect means could conceivably also be held with extreme confidence, and, hence, be more predictive of behavior than a direct experience attitude. For example, a child's attitude towards members of a given ethnic or racial group may be held with great confidence, even though formed indirectly because of his or her parents' extreme credibility (Fazio & Zanna, 1981, p. 184). The foregoing quote indeed suggests that experience may not

constitute a superior base of knowledge under all conditions, but it stops short of identifying the critical determinant of whether it may or may not be capable of fulfilling this function. The concept of self-ascribed epistemic authority may well constitute such a determinant.

In other words, whether or not personal experience would be regarded as a reliable knowledge base may depend on one's self ascribed capability to draw reliable conclusions from the experience, or on one's self-ascribed epistemic authority in a domain. In absence of such an authority, a person may fail to utilize the experience to derive confident knowledge. An individual may speak English all her life without deriving the principles of English grammar from this experience, she may drink a wide range of wines over the years without forming notions about the different varietals or vintages, or play tennis on a weekly basis without forming notions about the proper strategies and tactics of this game.

More generally, we assume that the extent to which individuals tend to draw confident conclusions from information is related to their authority assignment to the information source. When the information consists of one's own experience, the source simply is oneself. In these circumstances, the higher is one's self ascribed epistemic authority, the more readily one may trust one's own interpretation of information, and the more might one be able to "benefit" from the experience. When the information is interpreted by an external communicator (e.g. a teacher or a parent), however, the individual's tendency to accept the interpretation may partially depend on the perceived gap in epistemic authority between the source and the self. When the authority imputed to the source is considerably higher than that imputed to the self, the source's

pronouncements are likely to be attended closely and/or be assigned considerable weight. However, when the assigned authorities are more nearly equal, the source's statements might not be taken as seriously because of a sense that there is little the source could contribute to one's own ability to process the information. Thus, a "reverence effect" is hypothesized whereby interpretations from an external source will have greater impact on persons whose perceived authority gap between themselves and the source is large versus small.

In a study designed to investigate these notions, Ellis and Kruglanski (1992) assessed their participants' self-ascribed epistemic authority in mathematics. This was accomplished via a 14-item questionnaire inquiring into participants' perception of their expertise and confidence in understanding and being able to conceptualize mathematical material. For instance, one item on this questionnaire read: "After completing a math exam, I can tell how well I have done." Answers were recorded on a 5-point scale with the response alternatives ranging from "always" to "never." Another relevant item was phrased: "Your fourteen year old son is having difficulties with mathematical material with which you have not dealt in a long while. To what extent would you prefer to assist him yourself as opposed to getting him outside help." Response alternatives in this case ranged from "very large extent" to "very slight extent." Cronbach α of this SAEA scale was .89 attesting to a relatively high degree of internal consistency.

Participants also responded to the numerical aptitude test (Cattell & Epstein, 1975) to serve as a control measure for their actual math ability and to a post experimental questionnaire designed to assess their perceptions of their own and the instructor's (whenever appropriate) epistemic authority in mathematics.

The mathematical learning task employed in this research consisted of multiplication exercises in which some numbers were replaced by letters, as in the following example:

The numbers 9,6,7,5,3 in the following exercises have been replaced by letters. Find the missing numbers:

22a

bce

202a

hba

1aba

1hh2ba

To successfully solve this kind of exercise, participants need to use five arithmetic principles: (a) multiplication of x by 0 =0; (b) multiplication of x by 1=x, (c) multiplication of odd numbers by 5 = a number whose last digit is 5; (d) multiplication of an even number by 6=an even number whose last digit is the same as the multiplicand.[4] Participants were introductory psychology or education students at Tel-Aviv University. They were randomly assigned to one of three experimental conditions: In the experiential condition, participants were given self-instruction booklets with six exercises related to the five arithmetic rules above. In the instructional-principles condition, the experimenter

[4] Thus, in the present example, it is easy to discover that a =5 and e =9 . Hence, e x a =45 resulting in the digit 5 (or a) in the first row of the multiplication. If a=5 and a +2 = b (the second to last digit of the first row plus the last digit of the second row), then b must be 7, and so on.

was introduced by the participants' professor as a Ph.D. in mathematics conducting research on various ways of teaching the subject. In this condition he stated the various mathematical principles explicitly. In the intermediate, instructional-examples condition the instructor was introduced in the same way as before, but now he both solved on the board the very same exercises contained in the "experiential booklet," and stated the arithmetic principle underlying each solution. Following these procedures, participants took a performance test on the principles they had just been taught. Participants in the two instructional conditions were additionally asked to estimate the gap in ability between themselves and the instructor. Specifically, they answered the question: "In your opinion, how large is the gap between your and the instructor's ability to solve exercises of the present type?" Responses were recorded on a 5-point scale anchored at the ends with "a very large gap" and "a very small gap."

The results of this research indicated that the method of instruction entered into a significant interaction with participants' SAEA (see Figure 13). Controlling for participants' actual mathematical ability, in the experiential condition, participants with a high SAEA did significantly better than participants with a low SAEA. In the instructional principles condition, the low SAEA participants tended to do better than their high SAEA counterparts, and in the intermediate, instructional-examples condition the high and low SAEA participants did about the same. In the two instructional conditions it was furthermore found that participants with a high SAEA perceived the gap between their own and the instructor's ability as significantly lower than did participants with a low SAEA. Of greater interest, in both instructional conditions participants who perceived a large gap between themselves and the instructor did better in both

instructional conditions than participants who perceived a smaller gap (see Figure 14). A large gap indicates that the source's relative epistemic authority (compared to one's own) is considerable. This may turn the recipient into a "true believer" enhancing her or his readiness to accept the source's conclusions and recommendations.

Figures 13 and 14 here

Summary

The findings above identify an important boundary condition on the efficacy of experience as a mediator of learning. It appears that in order to be able to learn from experience individuals need to believe in their ability to draw inferences in the experiential domain in question, captured by our construct of self-ascribed epistemic authority. It is of particular interest that self-ascribed epistemic authority is empirically distinct from actual ability in a domain. In the present study, the correlation between the two, though significant, was relatively low (r=.36), and the interaction between SAEA and method of instruction was significant, controlling for actual mathematical ability. Finally, yet of considerable interest, in the instructional learning conditions it was participants whose perceived gap between own and instructor's ability was large (vs. small) who did significantly better attesting to a "reverence effect" whereby the impact of an external source is greater if its authority is high relative to one's own self-ascribed authority.

Epistemic Authority Beliefs in Real World Contexts

Beliefs about epistemic authorities of various sources constitute lay theories that people may hold and that exert an important influence on how they think, feel and act in given situations (Dweck, 1999). Identification of people's lay theories about epistemic authority may, thus, provide a useful window into their reactions to information and communication. This may prove of considerable value in real world contexts (e.g., in education, politics and commerce) where understanding the underpinnings of people's attitude change is of critical importance.

Political socialization in college. In a study on the change in students' political attitudes in the course of their college experience, Guimond and Palmer (1996) examined the epistemic authority that students ascribed to their peers, professors and courses to investigate whether the attitude change shown to occur during the college years, first demonstrated in Newcomb's (1943) classic study in Bennington college, is ascribable to the college experience as a whole, as compared to the academic major. To answer that question, Guimond and Palmer (1996) conducted a three year longitudinal study at a Canadian university with commerce and social science majors as participants. In the first phase, participants answered questions about the causes of unemployment and poverty including items about the degree to which they blamed the poor and the unemployed for their condition, and other items about the degree to which they assigned blame for poverty and unemployment to the political and economic system. In a second phase conducted three years later, these questions were repeated. In addition, participants reported how much their ideas were influenced by the course contents, professors, fellow students and other sources of information. Guimond and Palmer (1996) found intriguing

differences between the commerce and the social science majors in the relative epistemic authority they ascribed to various sources. In commerce, peers were generally perceived as the most important source of influence. The perceived influence of professors and course contents were lower in comparison. In contrast, the social science students perceived course contents and peers to be at a similar level of influence. It was also found that in both commerce and the social science peers had generally conservative effects, that is, their perceived epistemic authority was correlated with a conservative shift in the students' attitudes. Professors and courses in the social sciences had a liberal effect, in that their perceived epistemic authority was correlated with an attitudinal shift in the liberal direction. By contrast, in commerce professors and courses had a conservative effect on students attitudes. Possibly as a consequence of these patterns of ascribed epistemic authority, commerce students became less likely over time to attribute poverty and unemployment to the political system, thus increasing in their tendency to engage in "system justification" (Jost & Banaji, 1994), and to exhibit political conservatism. By contrast, social science students for whom the conservative influence of peers tended to be counteracted by the liberalizing influence of professors and courses tended less over time to engage in system justification, or attribute unemployment internally to the poor. Guimond and Palmer (1996, p. 2009) conclude that "This provides considerable support to theory and research related to the concept of epistemic authority… (and that) results concerning the role of perceived source of influence are noteworthy and represent a potentially fruitful area for future research."

Extra academic sources of political attitudes. A critical issue in democratic political systems is persuading voters to support candidates' positions on various issues.

But often political communications “fall on deaf ears” and recipients may reject or reframe arguments to the extent that these are delivered by sources of low ascribed epistemic authority. In an attempt to identify who such authorities may be for members of the Israeli electorate, Bar-Tal, Raviv and Raviv (1991) investigated the relation between similarity of positions on political issues and the ascriptions of epistemic authority in the political domain. Israeli university students were asked to identify their political orientation and to respond to a questionnaire addressing nine different and controversial political issues related to the Arab-Israeli conflict (e.g., establishment of an autonomous rule in the West Bank and the Gaza Strip, building Jewish settlements in the occupied territories, death penalty to terrorists, etc). With respect to each issue, participants were presented with a list of three prominent sources, a politician, a professor, and a journalist. In total, participants evaluated their reliance on 27 sources (9 from each professional sector). Three selected sources were previously identified as having a leftist political orientation, three as having a rightist political orientation and three as having a centrist orientation. Participants were asked to evaluate on a 5-point scale the degree to which they would rely on the information from each source regarding each of the nine issues.

The investigators’ point of departure was that individuals will bestow higher epistemic authority on sources sharing their political orientation. Several reasons combine to suggest this prediction. First, the selective exposure to information hypothesis (Sears and Freedman, 1967; Frey, 1986) suggests that people will seek out sources of information likely to provide information with which the recipients can agree. Such information may forestall situations of aversive dissonance (Festinger, 1957), or epistemic uncertainty (Kruglanski, 1989) and allow individuals to perceive their opinions

as a stable and reliable basis for action. Secondly, similarity has been known to promote liking (Byrne, 1971), and liking for a communicator has been known to increase persuasion (Petty & Cacioppo, 1986; Chaiken, Liberman & Eagly, 1989). In turn, the self-perception of persuasion might lead one to infer that the source had considerable epistemic authority and that is why it was persuasive. Thirdly, the causal relation between similarity and perceived authority might be such that the latter determined the former, that is, that perceived authority of the source induced persuasion which made the recipients opinions and attitudes similar to those of the source.

Consistent with the above analysis, it was found that students bestowed greater epistemic authority on politicians with whose opinions they agreed, suggesting that political communicators might be "preaching to the converted," i.e., to recipients that a-priori agree with their conclusions. Of greater local interest, there obtained some intriguing differences between recipients with a leftist (or dovish), versus a rightist (or hawkish) political orientation, and in accordance with the sources' profession. Specifically, the leftist students tended to rely more exclusively on leftist sources than did the hawkish students who were more open to sources of the opposing political persuasion (namely leftist university professors and politicians). Bar-Tal et al. (1991, p. 11) interpreted this to mean "that dovish students are more closed in their views than hawkish students." However, subsequent research by Raviv, Bar-Tal, Raviv and Abin (1993, Study 1) found that students with a rightist political orientation reported, in general, a higher reliance on their leaders and especially perceived them more as generalized epistemic authorities across knowledge domains than did leftist students. This suggests that the rightist students tend to perceive their leaders less critically and more

unquestioningly than do the leftist students. It is thus possible that rightist recipients are less critical of authoritative sources in general including sources preaching the opposite political views (Bar Tal et al., 1991) and that the leftist students are generally more critical of authoritative sources including sources preaching views with which they agree. These finding accord with a recent meta-analysis (Jost, Glaser, Kruglanski & Sulloway, 2003) whereby conservatives, or right leaning individuals tend to have a higher need for closure (Kruglanski & Webster, 1996) and in this sense are more authority oriented than are liberals, or left leaning individuals.

It was also found that all participants, regardless of their political orientation, perceived centrist journalists as the most reliable epistemic authorities. Generally, university professors were perceived as important epistemic authorities, possibly due to their assumed extent of knowledge and commitment to objectivity. Finally, leftist journalists were perceived as least reliable, and endowed with least epistemic authority in comparison to the other sources. In this connection, Bar-Tal et al (1991, p. 12) comment on "the prevailing perception in Israel that leftist journalists are not to be trusted and (that they) stand outside the main consensus (and) are generally considered as opinionated and extreme in their positions."

In general, the findings by Bar-Tal et al. (1991) suggest the utility of locally mapping the patterns of epistemic authority and identifying whose opinion matters to what recipients. Such information could serve as an important basis for launching effective political discussions in which the issues at hand are considered relatively open mindedly, and in which they receive the attention they deserve.

Parents' epistemic authority in the realm of political knowledge. Political psychologists have often commented on the intergenerational continuity in voting patterns in the US (Sears, 1969). In this vein, Shapira (1993) conducted a study exploring the role of the parents' epistemic authority in fostering such a continuity. Specifically, Shapira carried out telephone interviews with a sample of 16-18 years old Israelis as well as in either their father or their mother. The interview included questions pertaining to the parent's epistemic authority in politics as well as questions tapping the adolescents' and their parents' political opinion. Shapira found a significant relation between the father's perceived epistemic authority in politics and the similarity between his and his son's or daughter's political views. In other words, the more the father was perceived as an epistemic authority, the smaller was the gap between his and his children's political views. By contrast, there was no relation between the mother's perceived epistemic authority and the similarity between her and her children views. In part, this may have been due to the fact that the mother's perceived epistemic authority in politics was substantially lower than the father's, hence restricted to a portion of the epistemic authority range where the source exercises little influence on the recipients.

Epistemic authority of professors in statistics and psychology. Different academic disciplines may be accorded different amounts of prestige in society and it is, therefore, of interest to ask whether experts in those domains are bestowed with correspondingly different degrees of epistemic authority and whether such authority is reserved for the specific domains of the experts' competence or whether it is generalized to other domains of knowledge as well. As a first step toward investigating these issues, Raviv et al. (1993, Study 2) carried out an investigation of the epistemic authority accorded to professors of

statistics and psychology by their respective students. It might be assumed that as a branch of mathematics, statistics is perceived as a more exact and specialized science than psychology. Statistical knowledge may be regarded as more remote from common sense and hence accorded greater reverence than psychological knowledge assumed by many to be close to common sense. Thus, it might be hypothesized that statistical experts would be accorded a higher degree of epistemic authority than psychological experts.

To investigate these matters, Raviv et al. (1993, Study 2) had statistics and psychology majors evaluate the epistemic authority in domain specific or general knowledge of professors in their respective departments. It was found that the statistical majors ascribed greater domain specific authority to their professors than did the psychology students, but that the latter ascribed greater epistemic authority to their professors in the domain of general knowledge (see Figure15). These findings support the prediction that statistical experts are perceived as greater authorities in their domain of competence than psychological experts, but that their authority is perceived as more circumscribed than that of psychological experts. One limitation of the Raviv et al. (1993) research is that the evaluation of the different targets was carried out by participants from different populations (namely, of statistics versus psychology students). Thus, one cannot be sure whether the effects are target driven or participant driven. Further research is needed wherein the same type of participants evaluate the epistemic authority of various sources to investigate the possibility that in highly prestigious academic domains the experts' perceived epistemic authority may spill over to domains beyond their area or competence, such as politics, education, or ethics.

Figure 15 here

Summary

Results reviewed in the preceding sections attest to the utility of the epistemic authority construct as a tool for mapping the patterns of potential informational influence (Fench & Raven, 1959) in real world contexts. Such mappings may be useful in predicting given sources' influence in a given situation, with respect to a given topic and for a given category of recipients. Such mapping could also serve to appropriately associate communications with sources for maximal persuasive impact in real world interventions.

Summary and Conclusions

The present chapter featured the concept of ascribed epistemic authority (Kruglanski, 1989) offered as a unique perspective on source effects in social judgment. In contrast to prior approaches that viewed the source of communication as external to the self, the present framework assumes that both the self and external sources may be assigned different degrees of epistemic authority in different domains and that such assignment affects various aspects of individuals' information processing activities including the search for information and the readiness to base decisions on the information given. The present framework claims a central role for the information's source in suggesting that an evaluation of its epistemic authority (however implicit) constitutes an essential preliminary phase in individuals' approach to information. For instance, a careful processing of a persuasive message may occur only after a prior determination has yielded that one possesses a sufficient epistemic authority to make sense of the message, hence is not dependent on an external source for interpretation. In general, it could be the perceived gap in epistemic authority ascribed to oneself versus an

external source that determines the sources influence. A failure to take one's self-ascribed epistemic authority into account might thus lead to inaccurate estimations of the potential impact of external sources' authority. A source with relatively high ascribed authority may be quite persuasive with respect to a recipient of much lower self-ascribed authority, but much less persuasive with respect to a recipient of a high self-ascribed authority.

We thus conceive of epistemic authority ascriptions as meta-cognitive beliefs about a source of information. This perspective highlights the developmental, individual differences, self-related and applied aspects of source phenomena. The developmental aspect pertains to the fact that in the course of "growing up," the initial generalized epistemic authority accorded by the child to its adult caregivers is gradually distributed over a variety of sources in the individual's environment including the self. The individual difference aspect pertains to the fact that individuals' disparate socialization histories may foster the development of correspondingly different hierarchies of epistemic authorities for different individuals. In turn, these may effect behavioral differences in the search for, and reliance on information for decision making and action. The self-relevant aspect relates to the role of experience in attitude and opinion formation, and the moderating role that self-ascribed epistemic authority may play in one's ability to draw strong conclusions from experience. Finally, the applied aspect pertains to the fact that identification of a distributional pattern of epistemic authorities assigned by a specific group of individuals to specific sources in specific real world contexts (in politics, education, and health domain among others) may allow one to make specific predictions and plan specific interventions designed to influence those individuals in a desirable direction. For instance, internet savvy, educated, consumers

may weigh heavily their own epistemic authority in health related domains and expend considerable efforts on analyzing information relevant to their condition before opting for a course of treatment. By contrast, persons with low self-ascribed authority may be guided primarily by their family physician's recommendations in all medical matters. The unfolding historical trends in these regards, and their impact on physicians' and patients relations could be of considerable real world interest.

Research conducted in the epistemic authority paradigm supported various aspects of the foregoing analysis with respect to the developmental, individual difference, self-related and applied aspects of source effects. Yet, a great deal of further work is needed to fully understand the development and functioning of epistemic authority in social judgment. As already noted, the relation of epistemic authority ascriptions to attachment patterns (Mikulincer & Shaver, in press) suggests intriguing questions: Would secure attachment to one's parents contribute to a generalized trust in others, and hence to the development of a strong emphasis on external epistemic authorities, and would it mean a retardation in the development of one's self as an epistemic authority? Or would this contribute, instead, to a more nuanced differentiation of epistemic authorities, with the self being ascribed authority in specific domains and others being conceded authority in other domains? Similarly, would an avoidant attachment style contribute to the development of an exaggerated and over generalized sense of epistemic authority, and the tendency of excessive self reliance in domains where one's objective epistemic competence may be limited? These questions and others may be fruitfully pursued in future research contributing to the integration of attachment and social influence theories.

A different set of issues may arise in research on the situational determinants of epistemic authority ascriptions. Social cognition researchers have been emphasizing how people's attitudes, judgments and beliefs may be situationally constructed (cf. Bem, 1972; Kruglanski & Stroebe, 2004). In so far as epistemic authority ascriptions also constitute beliefs, they too should be susceptible to various situational influences. In this vain, Brinol and Petty (2004) review evidence attesting that various experimental manipulations may affect individuals' confidence in their cognitive responses to a communication topic, and hence, presumably, their self ascribed epistemic authority in a domain. It would be of interest to investigate whether similar effects may be obtained in regard to external sources as well. For example, nodding one's head, an assured tone of voice, the use of definite and unqualified terminology, or the speed of speech (Miller, Maruyama, Beaber & Valone, 1976) may convey a source's confidence leading to an ascription of a high epistemic authority, and enhancing the source's persuasive impact upon a recipient. Furthermore, whereas the situational manipulations of confidence reviewed thus far pertained to possible informational effects on epistemic authority it is likely that various motivations would exert such effects as well. In this vein, Bar (1999) reported that participants' need for cognitive closure effected more extreme assignments of epistemic authority, such that the high authority sources were accorded an even higher authority by individuals high (vs. low) on the need for cognitive closure. Conversely, low authority sources were accorded an even lower authority by high (vs. low) need for closure individuals. Whereas Bar's findings were based on a dispositional need for closure assessed by means of a scale (Webster & Kruglanski, 1994) it should be the case

that situational inducements of such a need, e.g., via noise, fatigue or time pressure, should also affect an increased differentiation in epistemic authority assignments.

In addition to nondirectional motivational effects (such as the need for closure effects described above) it is also likely that various directional motivations (Kunda, 1990; Kruglanski, 1996) would similarly impact epistemic authority assignments to self and others. For instance, in a situation where ascribing epistemic authority to a source would seem highly desirable, e.g., where the source was in a leadership position or where one was informationally dependent on the source for important outcomes, one might assign the source a greater epistemic authority than one would in other circumstances. These possibilities and many others could be profitably explored in subsequent research conducted within the epistemic authority framework.

References

Allyn, J., & Festinger, L. (1961). The effectiveness of unanticipated persuasive communications. Journal of Abnormal and Social Psychology, 62, 35-40.

Bar, R. (1983). Hierarchy of Epistemic Authority Test. Unpublished master's Thesis. Tel-Aviv University.

Bar, R. (1999). The impact of epistemic needs and authorities on judgment and decision making. Unpublished doctoral dissertation. Tel Aviv University.

Bar-Tal, D., Raviv, A.& Raviv, A. (1991). The concept of epistemic authority in the process of political knowledge acquisition. Representative Research in Social Psychology, 19, 1-14.

Bar-Tal, D., Raviv, A.,Raviv, A. & Brosh, M. (1991). Perception of epistemic authority and attribution for its choice as a function of knowledge area and age. European Journal of Social Psychology, 21, 477-492.

Bem, D.J. (1972). Self-perception theory. In L. Berkowitz (Ed.). Advances in experimental social psychology (Vol. 6, pp. 1-62). San Diego, CA: Academic Press.

Bowlby, J. (1988). A secure base: Clinical applications of attachment theory. London: Routledge.

Brinol, P. & Petty, R.E. (2003). Overt head movements and persuasion: A self-validation analysis. Personality and Social Psychology Bulletin, 29, 1123-1271.

Brinol, P. & Petty, R.E. (2004). Self-validation processes: The role of thought confidence in persuasion. In G. Haddock & G. Maio (Eds.). Contemporary perspectives on the Psychology of Attitudes **(pp. ?)**. New York: Psychology Press.

Berndt T. J. (1979). Developmental changes in conformity to peers and parents. Developmental Psychology, 15, 608-616.

Byrne, D.E. (1971). The attraction paradigm. San Diego, CA: Academic Press.

Cattell, R.B. & Epstein, A.R. (1975). Comprehensive ability battery. Champaign, Illinois: Institute for Personality and Ability Testing.

Chaiken, S. (1979). Communicator physical attractiveness and persuasion. Journal of Personality and Social Psychology, 37, 1387-1397.

Chaiken, S., Liberman, A. & Eagly, A.H. (1989). Heuristic and systematic processing within and beyond the persuasion context. In J.S. Uleman & J.A. Bargh(Ed.). Unintended thought (pp. 212-252). New York: Guilford.

Chun, W.Y., Spiegel, S. & Kruglanski, A. W.(2002) Assimilative behavior identification can also be resource dependent: A Unimodel-Based Analysis of Dispositional Attribution Phases. Journal of Personality and Social Psychology, 83, 542-555.

Cohen, A.R. (1964). Attitude change and social influence. New York: Basic Books.

Collins, N.L., & Read, S.J. (1990). Adult attachment, working models, and relationship quality in dating couples. Journal of Personality and Social Psychology, 58, 644-663.

De Grada, E., Kruglanski, A.W., Mannetti, L., and Pierro, A. (1999). Motivated Cognition and Group Interaction: Need for Closure Affects the Contents and Processes of Collective Negotiations. Journal of Experimental Social Psychology, 35, 346-365.

Dewey, J. (1916). Democracy and education. New York: Free Press.

Dewey, J. (1958). Experience and nature. New York: Collier Macmillan.

Dweck, C.S. (1999). Self-theories: Their role in motivation, personality, and development. New York: Psychology Press.

Ellis, S.(1996). Selecting information on job content or job context: The moderating effect of one's own epistemic authority. Journal of Applied Social Psychology, 26(18), 1643-1657.

Ellis, S. & Kruglanski, A.W. (1992). Self as an epistemic authority: Effects on experiential and instructional learning. Social cognition, 10(4), 357-375.

Erikson, E.H. (1950). Childhood and Society. New York: Norton.

Erb, H.P., Kruglanski, A.W., Chun, W.Y., Pierro, A., Mannetti, L., & Spiegel, S. (2003). Searching for commonalities in human judgment: The parametric unimodel and its dual mode alternatives. European Review of Social Psychology, 14, 1-47.

Fazio, R.H. & Zanna, M.P. (1981). Direct experience and attitude-behavior consistency. In L. Berkowitz (Ed.). Advances in experimental social psychology (Vol. 14, pp. 161-203). New York: Academic Press.

Festinger,L. (1957). A theory of cognitive dissonance. Stanford, CA: Stanford University Press.

Fiske, S.T. (2004). Social beings: A core motives approach to social psychology. New York: Wiley.

Floyd, H. H. & South, D. R. (1972). Dilemma of youth: The choice of parents or peers as a frame of reference for behavior. Journal of Marriage and the Family, 34, 627-634.

French, J.R.P. & Raven, B.H. (1959). The bases of social power. In D. Cartwright (Ed.), Studies in Social Power (pp. 150-167). Institute for Social Research, Ann Arbor (MI).

Freud, A. (1965). Normality and pathology in childhood: Assessments of development. New York: International Universities Press.

Frey, D. (1986). Recent research on selective exposure to information. In L. Berkowitz (Ed.). Advances in experimental social psychology (Vol. 19, pp. 41-80). San Diego, CA: Academic Press.

Guimond, S. & Palmer, D.L. (1996). The political socialization of commerce and social science students: Epistemic authority and attitude change. Journal of Applied Social Psychology, 26(22). 1985-2013.

Hartup, W. W. (1983). Peer relations. In: P. H. Mussem (Ed.) Handbook of child psychology (4th ed., Vol. 4, pp. 103-196). New York: John Wiley & Sons

Hovland, C.I., Janis, I.L. & Kelley, H.H. (1953). Communication and persuasion: psychological studies of opinion change. New Haven, CT : Yale University Press.

Hovland, C.I. & Weiss, W. (1951). The influence of source credibility on communication effectiveness. Public Opinion Quarterly, 15, 635-650.

Hunter, F. T. (1985). Adolescents' perception of discussions with parents and friends. Developmental Psychology, 21, 433-440

Jost, J. T., & Banaji, M.R. (1994). The role of stereotyping in system-justification and the production of false consciousness. British Journal of Social Psychology, 33, 1-27.

Jost, J.T., Glaser, J., Kruglanski, A.W. & Sullaway, F.J. (2003). Political conservatism as motivated social cognition. Psychological Bulletin, 129(3), 339-375

Jourard, S.M. (1959). Disclosure and other cathexes. Journal of Abnormal and Social Psychology, 59, 428-431.

Kagan, J. (1958). The concept of identification. Psychological Review, 65, 296-305.

Kelley, H.H. & Thibaut, J.W. (1969). Group problem solving. In G. Lindzey & E. Aronson (Eds.). The handbook of social psychology (Vol. 4. pp. 1-101**)**. Reading, Mass: Addison Wesley.

Kelman, H.C. & Hovland, C.I. (1953). "Reinstatement" of the communicator in delayed measurement of opinion change. Journal of Abnormal and Social Psychology, 48, 327-335.

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

Kruglanski, A.W. (1996). Motivated social cognition: Principles of the interface. In E.T. Higgins & A .W. Kruglanski (Eds.). Social psychology: A handbook of basic principles (pp. 493-520). New York: Guilford.

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

Kruglanski, A.W. & Jaffe, Y. (1988). Curing by knowing: The epistemic approach to cognitive therapy. In L. Y. Abramson (Ed). Social cognition and clinical psychology: A synthesis (pp. 254-291). New York, NY, US: Guilford Press.

Kruglanski, A.W., Fishback, A., Erb, H.P., Pierro, A., & Mannetti, L. (2004). The unimodel as a theory of persuasion. In G. Haddock and G. R. Maio (Eds.), Contemporary perspectives on the Psychology of Attitudes (pp. 399-422). New York: Psychology Press.

Kruglanski, A.W. & Thompson, E.P. (1999a). Persuasion by a single route: A view from the unimodel. Psychological Inquiry, 10, 83-109.

Kruglanski, A.W. & Thompson, E.P. (1999b). The illusory second mode, or the cue is the message. Psychological Inquiry, 10, 182-193.

Kruglanski, A..W., & Stroebe, W. (in press). Attitudes, goals and beliefs: Issues of structure, function and dynamics. In. D. Albarracin, B. Johnson, & M.P. Zanna (Eds.). Handbook of Attitude Research. New York: Guilford.

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

Kunda, Z. (1990). The case for motivated reasoning. Psychological Bulletin, 108, 480-498.

Mackie, D.M. (1987). Systematic and nonsystematic processing of majority and minority persuasive communications. Journal of Personality and Social Psychology, 53, 42-52.

Mazliach-Liberman, G. (2003). The role of cognitive structuring as a moderating variable among expertise, self epistemic authority, self efficacy and performance. Unpublished doctoral dissertation. Tel-Aviv University.

McGuire, W.J. (1969). The nature of attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.). Handbook of social psychology, 2nd edition, (vol. 3**,** pp. 136-314). Reading, Mass: Addison-Wesley.

Mikulincer, M. (1998). Attachment working models and the senses of trust: An exploration of interaction goals and affect regulation. Journal of Personality and Social Psychology, 74, 1209-1224.

Mikulincer, M. & Shaver, P.R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M.P.Zanna (Ed.), Advances in experimental social psychology (Vol. 35**,** pp. 53-152). San Diego: Academic Press.

Mikulincer, M. & Shaver, P.R. (in press). Contributions of attachment theory and research to motivation science. In J. Shah & W. Gardner (Eds.). Handbook of Motivation Science. New York: Guilford.

Miller, N., Maruyama, G., Beaber, R.J., & Valone, K. (1976). Speed of speech and persuasion. Journal of Personality and Social Psychology, 34, 615-624.

Newcomb, T. M. (1943). Personality and social change. New York, NY: Dryden.

Nisbett, R.E. & Wilison, T. (1977). Telling more than we can know: Verbal reports on mental processes. Psychological Review, 84, 231-259.

Payne, J.W. (1976). Task complexity and contingent processing in decision making. An information search and protocol analysis. Organizational Behavior and Human Performance, 16, 366-387.

Petty, R.E. & Cacioppo, J.T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.). Advances in experimental social psychology, (Vol., 19, pp. 123-205). San Diego, CA: Academic.

Petty, R.E., Cacioppo, J.T. & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. Journal of Personality and Social Psychology, 41, 847-855.

Petty, R.E., Brinol, P. & Tormala, Z.L. (2002). Thought confidence as a determinant of persuasion: The self-validation hypothesis. Journal of Personality and Social Psychology, 82(5), 722-741.

Pierro, A., & Mannetti, L. (2004). Motivated consumer search behavior: The effects of Epistemic Authority. Unpublished manuscript. University of Rome "La Sapienza".

Pierro, A., Mannetti, L., Kruglanski, A.W. & Sleeth-Keppler, D. (2004). Relevance Override: On the reduced impact of "cues" under high motivation conditions of persuasion studies. Journal of Personality and Social Psychology, 86, 251-264.

Putnam, R.D. (2000). Bowling alone: The collapse and revival of American community. New York: Simon and Schuster.

Raviv, A., Bar-Tal, D., Raviv, A., & Abin, R. (1993). Measuring epistemic authority. European Journal of Personality, 7, 119-138.

Raviv, A., Bar-Tal, D., Raviv, A. & Ben-Horin, A. (1996). Adolescent idolization of pop singers: Causes, expressions and reliance. Journal of Youth and Adolescence, 25(5), 631-650.

Raviv, A., Bar-Tal, D., Raviv, A. & Houminer, D. (1990). Development of epistemic authority perception. British Journal of Developmental Psychology, 8, 157-169.

Raviv, A., Bar-Tal, D., Raviv, A. & Peleg, D (1990). Perception of epistemic authorities by children and adolescents. Journal of Youth and Adolescence, 19, 495-510.

Raviv, A., Bar-Tal, D., Raviv, A., Biran, B., & Sela, Z. (2003). Teachers'epistemic authority: perceptions of students and teachers. Social Psychology of Education, 6, 17-42.

Rogers, C.R. (1951). Client-centered counseling. London: Constable.

Rogers, C.R. (1967). On becoming a person. London: Constable.

Ruble, D.N. & Seidman, E. (1996). Social transitions: Windows into social psychological processes. In E.T. Higgins and A.W. Kruglanski (Eds.). Social psychology: A handbook of basic principles. New York: Guilford, pp. 830-856.

Sears D.O. (1969). Political behavior. In G. Lindzey & E. Aronson (Eds). Handbook of social psychology (Vol. 5**,** pp. 315-458**)**. Reading: Mass: Addison-Wesley.

Sears, D.O. & Friedman, J.L. (1967). Selective exposure to information: A critical review. Public Opinion Quarterly, 31, 194-213.

Sebald, H. (1986). Adolescents' shifting orientation toward parents and peers: A curvilinear trend over recent decades. Journal of Marriage and the Family, 48, 5-13.

Shafer, J.B.P. (1978). Humanistic psychology. Englewood Cliffs, NJ: Prentice Hall.

Shapira, B. (1993). The development of political preferences among youths: The effects of parents' perception as epistemic authorities. Unpublished doctoral dissertation. Tel-Aviv University.

Spiegel, L.A. (1958). Comments on the psychoanalytic psychology of adolescence. Psychoanalytic Study of the Child, 13, 296-308.

Staton, T.F. (1963). Dynamics of adolescent adjustment. New York: Macmillan.

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

Webster, D.M. & Kruglanski, A.W. (1998). Cognitive and social consequences of the need for cognitive closure. European Review of Social Psychology, 8, 133-161.

Weiss, W. & Fine, B.J. (1955). Opinion change as a function of some intrapersonal attributes of the communicatees. Journal of Abnormal and Social Psychology, 51, 246-253.

Weiss, W. & Fine, B.J. (1956). The effect of induced aggressiveness on attitude change. Journal of Abnormal and Social Psychology, 52, 109-114.

Winnicott, D.W. (1965). The maturational processes and the facililtating environment. New York: International Universities Press.

Wintre, M. J., Hicks, R., McVey, G., & Fox, J. (1988) Age and sex differences in choice of consultant for various types of problems. Child Development, 59, 1046-1055.

Figure 1A. Mean Epistemic Authority of Various Sources in the Domain of Pastime for 3 Age Groups (Raviv, Bar-Tal, Raviv & Houminer, 1990)

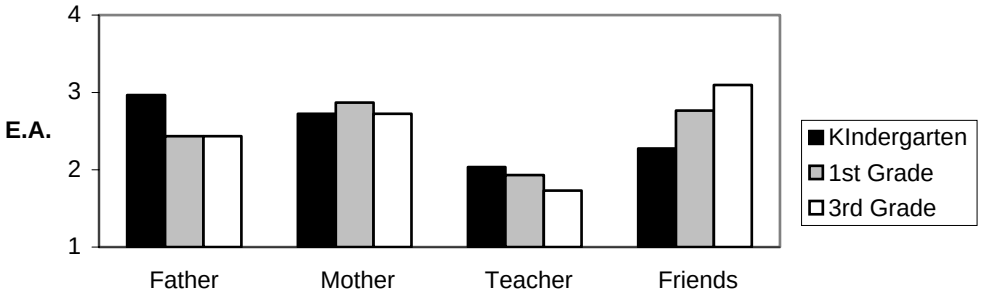

Figure 1B. Mean Epistemic Authority of Various Souroces in the Domain of Science for 3 Age Groups (Raviv, Bar-Tal, Raviv & Houminer, 1990)

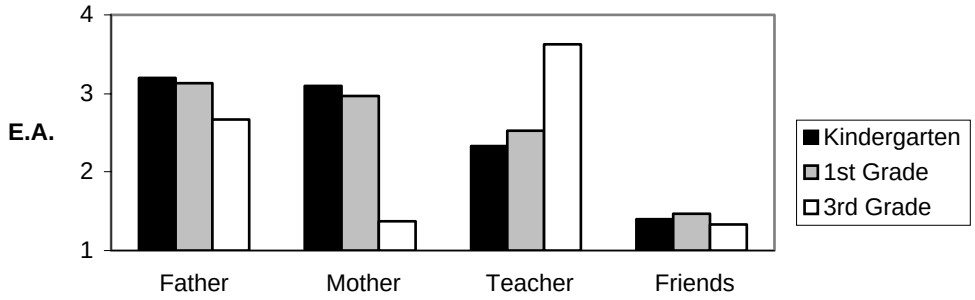

Figure 2A. Mean Epistemic Authority of Various Sources in the Domain of Formal Knowledge for 3 Age Groups (Raviv, Bar-Tal, Raviv & Peleg, 1990)

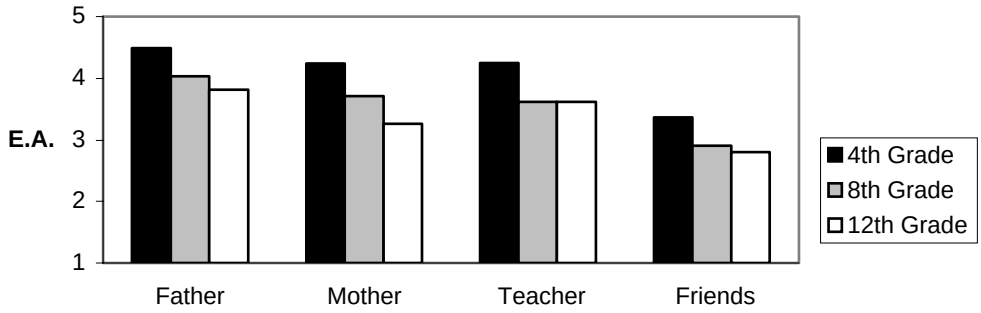

Figure 2B. Mean Epistemic Authority of Various Sources in the Domain of Social Knowledge for 3 Age Groups(Raviv, Bar-Tal, Raviv & Peleg, 1990)

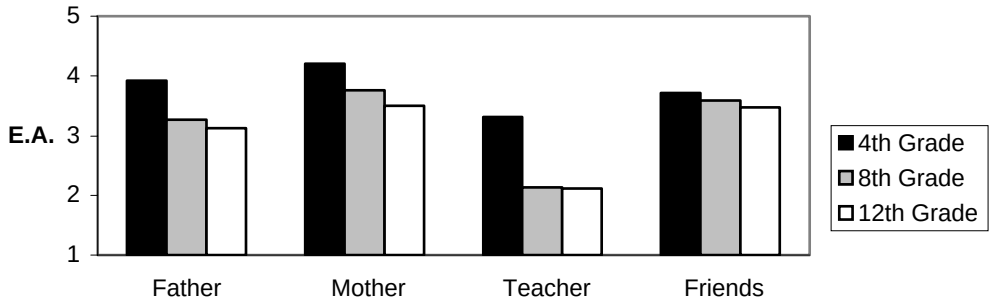

Figure 2C. Mean Epistemic Authority of Various Sources in the Domain of General Life Knowledge for 3 Age Groups (Raviv, Bar-Tal, Raviv & Peleg, 1990)

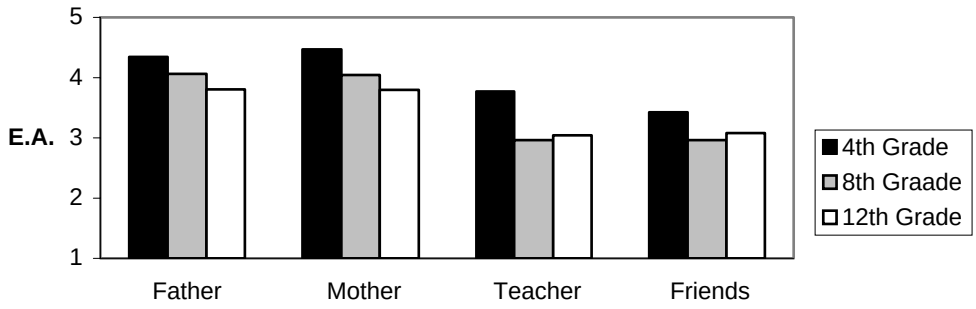

Figure 3. Mean Epistemic Authority Differentiation Scores of Different Sources For Three Age Groups (Raviv, Bar-Tal, Raviv & Peleg, 1990)

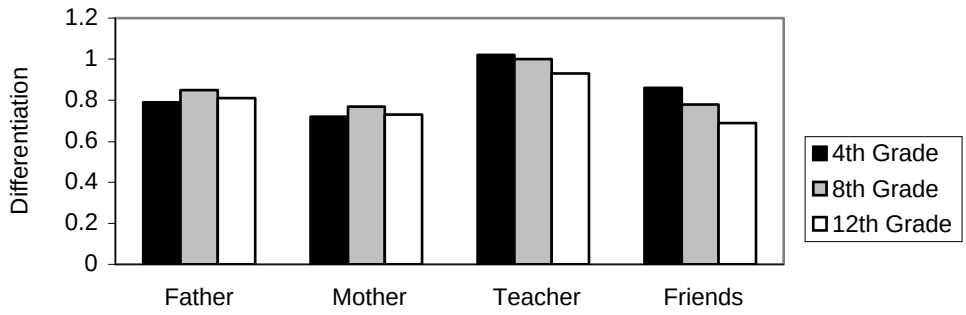

Figure 4. Mean Number of Domains in Which a Given Source Was Selected as a Top Epistemic Authority for Three Age Groups (Bar-Tal, Raviv, Raviv & Brosh, 1991)

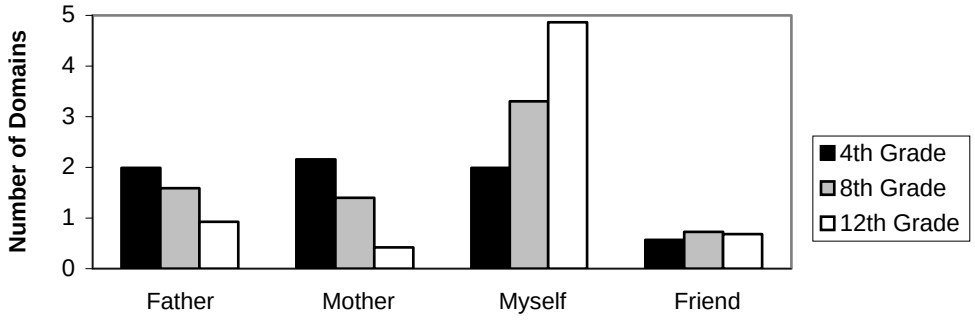

Figure 5. Mean Reliance on Pop Singer in Personal Matters as a Function of Age and Gender (Raviv, Bar-Tal, Raviv & Ben-Horin, 1996)

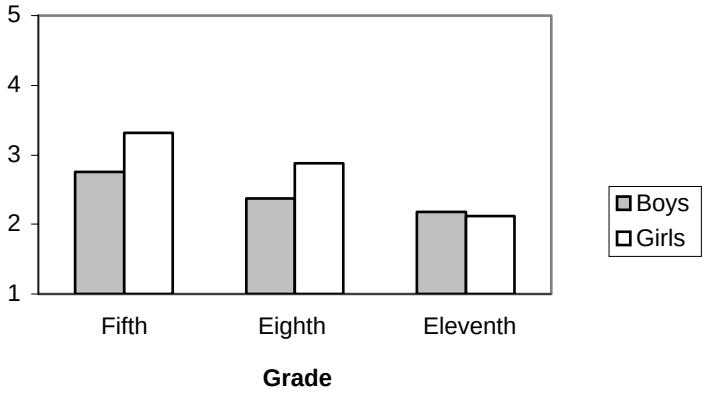

Figure 6. Percent of Participants Who First Opened Window Corresponding to Top Epistemic Authority and Who Chose Product that It Recommended (Bar, 1999, Study 1)

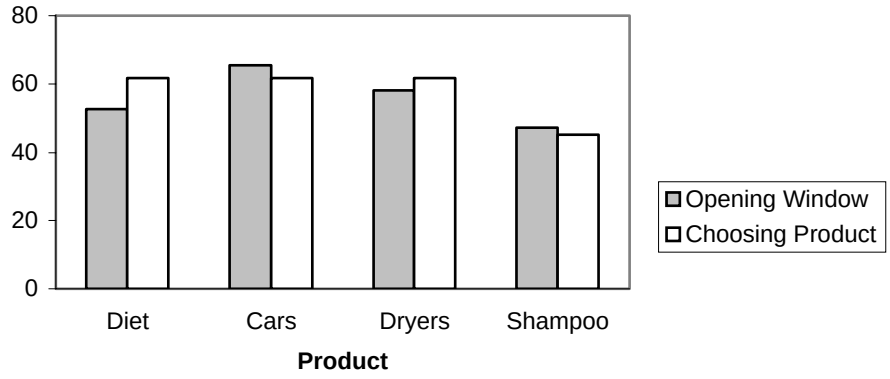

Figure 7. Mean Number of Informational Windows Opened First, Corresponding to Strong vs. Weak Dominant Epsitemic Authority Under Two Degrees of Time Pressure and Accuracy Concerns (Bar, 1999, Study 2)

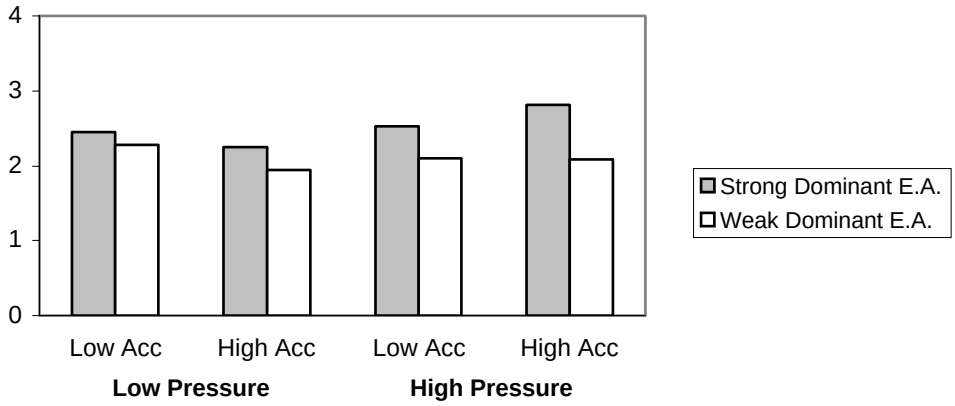

Figure 8. Mean Degree of Confidence in Chosen Products Recommended by Dominant vs. Non Dominant Epistemic Authority Under Two Degrees of Time Pressure and of Accuracy Concerns (Bar, 1999, Study 2)

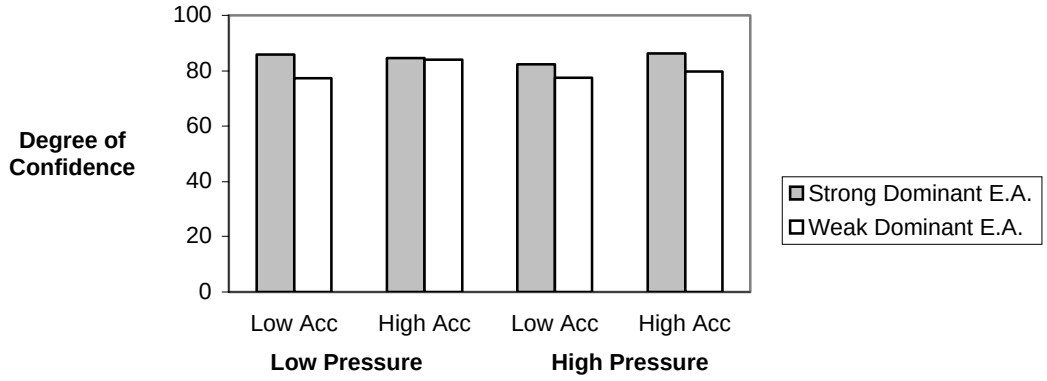

Figure 9. Choice of Conflict Avoidant Strategy as a Function of Externality of dominant Epistemic Authority and Time Pressure (Bar, 1999, Study 4)

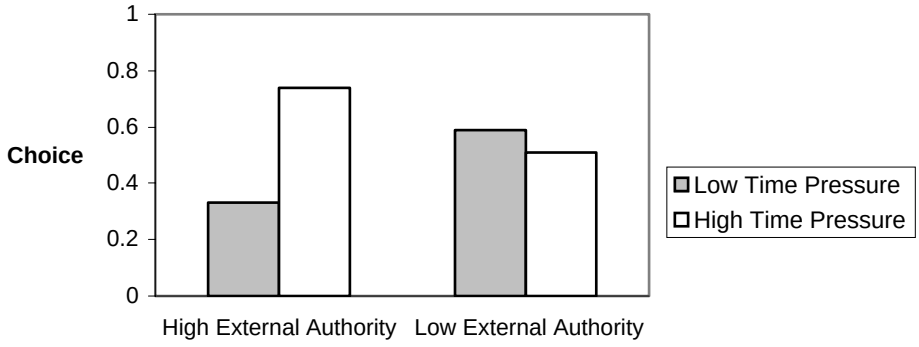

Figure 10. External information search as a function of Need for Closure (NFC) and Self-Ascribed Epistemic Authority (SAEA) (Pierro & Mannetti, 2004, Study 1)

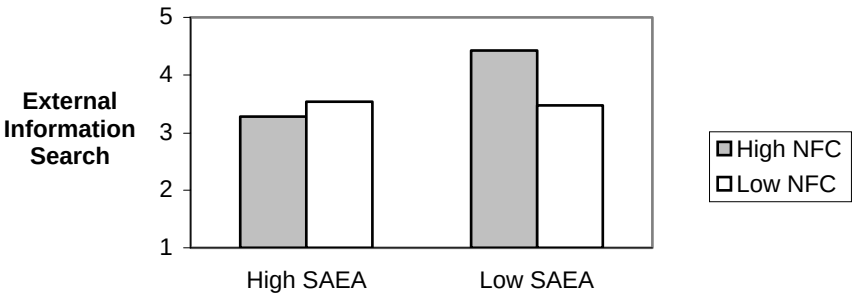

Figure 11. Attitude toward telephone as a function of Feature Relevance and Self-Ascribed Epistemic Authority (SAEA) (Pierro & Mannetti, 2004, Study 2).

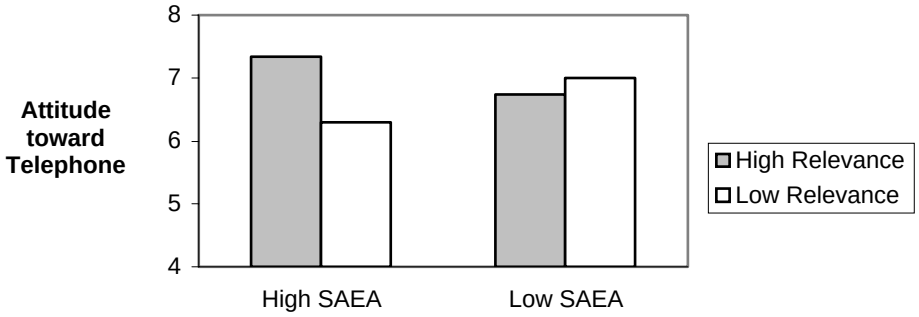

Figure 12. Job Attitudes as Function of Self Ascribed Epistemic Authority (SAEA) and Job Description (Content Only versus Content + Context) (Ellis, 1996)

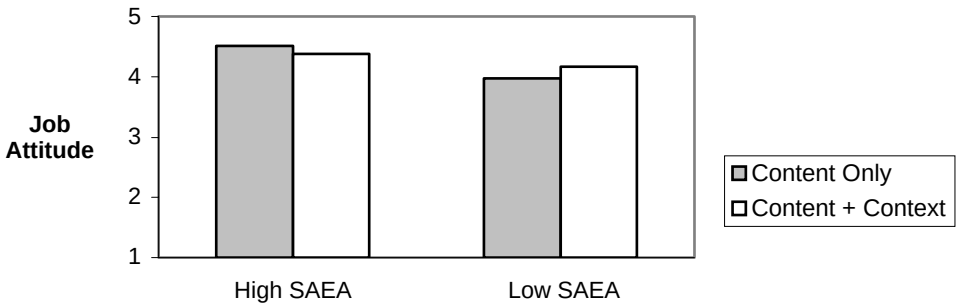

Figure 13. Mean Math Performance as a Function of Self Ascribed Epistemic Authority and Learning Condition (Ellis and Kruglanski, 1992)

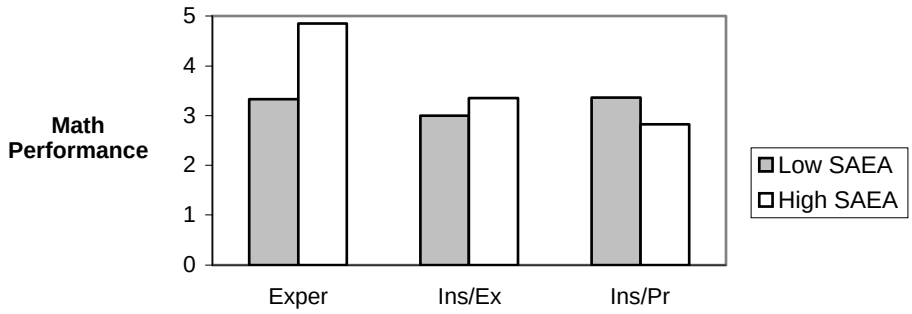

Figure 14. Mean Math Performance in Instructional Conditions as Function of Perceived Gap in Epistemic Authority Between Self and Instructor (Ellis and Kruglanski, 1992)

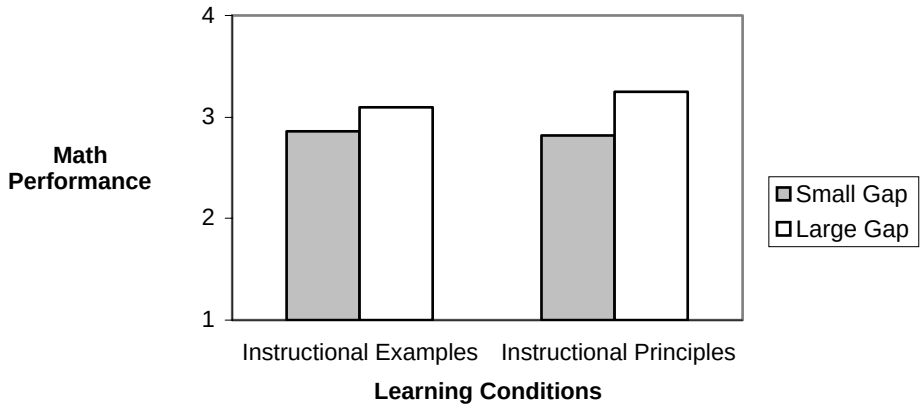

Figure 15. Mean Ascribed Epistemic Authority to Professors of Statistics and Psychology Regarding Specific and General Knowledge Domain (Raviv, Bar-Tal, Raviv & Abin, 1993)