

EPISTEMIC REASONING AND ADOLESCENT EGOCENTRISM AMONG
ADOLESCENT BOYS WITH BEHAVIORAL DISORDERS AND THEIR
PEERS WITHOUT BEHAVIORAL DISORDERS

by

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Abstract

A number of investigations have been conducted to examine social cognition and psychopathology among adolescents, yet little is known about the social cognitive reasoning of adolescents identified as having severe behavioral disorders. The purpose of the present study was to explore the social cognitive reasoning of adolescent boys with behavioral disorders in comparison to their peers without behavioral disorders. Group differences were examined with respect to epistemic reasoning and the dimensions of adolescent egocentrism. In addition, the relation between social cognition and social relationships was investigated. Finally, the relation between social cognition and psychopathology was explored.

Thirty-one adolescent boys with behavioral disorders and 32 of their peers without behavioral disorders (matched for age, race, and SES) participated in the study. All participants were individually administered measures designed to assess epistemic reasoning, imaginary audience and personal fable ideation (i.e., invulnerability, omnipotence, personal uniqueness), and personal-intimacy and group-integration with peers and family. In addition, boys with behavioral disorders completed a measure of internalizing, externalizing, and total problem behaviors. Teacher-ratings of problem behaviors were also completed for each participant in the study.

Results revealed that adolescent boys with behavioral disorders were lower in epistemic reasoning than were adolescent boys without behavioral disorders. Groups were not found to differ with respect to imaginary audience or personal fable ideation. For boys with behavioral disorders, no relation was found between social cognition

and social relationships. In contrast, for boys without behavioral disorders, personal uniqueness was negatively related to group-integration with peers and omnipotence was positively related to group-integration with family. Social cognitive reasoning was found to predict self-reported problem behaviors for boys with behavioral disorders and teacher-reported problem behaviors for boys without behavioral disorders. Overall, these results suggest the importance of epistemic reasoning in understanding the relation between social cognition and psychopathology.

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Introduction

The way in which an individual organizes and interprets life experiences influences his or her behavior. It follows, then, that in order to gain a clear understanding of behavior it is first necessary to examine how an individual thinks about and makes meaning of life experiences. To date, social cognitive theory has provided a useful framework for research aimed at examining the reasoning that underlies social behaviors (e.g., Chandler, 1982; Crick & Dodge, 1994; Demorest, 1992; Dodge & Richard, 1985; Flavell & Miller, 1998; Ford, 1982; Pellegrini, 1985; Selman, 1976; Yeates & Selman, 1989). The study of social cognition involves the application of cognitive abilities to social situations or social experiences (Chandler & Boyes, 1982; Flavell & Miller, 1998; Lapsley, 1990; Shantz, 1983). Simply stated, social cognitive theory addresses the question, "How do children conceptualize and reason about their social world?" (Shantz, 1983, p. 495).

Adolescence is a developmental period that provides a uniquely different picture of social cognition from that found in either earlier or later stages of life. Between childhood and adulthood, significant changes occur in cognitive processing abilities (e.g., movement from concrete to abstract thinking) (Inhelder & Piaget, 1958) as well as in social reasoning (e.g., Chandler, 1987; Elkind, 1967; Selman, 1976; Shantz, 1983). For example, development in social perspective-taking occurs. Specifically, although children can distinguish their own perspectives from those of others (i.e., self-reflective role-taking), adolescents typically move beyond this dyadic perspective-taking and experience increased ability to take and mutually coordinate a third-person perspective (Selman, 1976).

Two social cognitive constructs that have been utilized to explain behaviors typically displayed by adolescents are epistemic doubt (Chandler, 1987) and adolescent egocentrism (Elkind, 1967). Each of these constructs provides some insight into how the adolescent reasons about and responds to information from multiple perspectives. For example, in the realm of epistemic reasoning, the adolescent's belief that attainment of objective knowledge is a possibility is replaced with doubt as a result of his or her accumulating experiences with conflicting perspectives (Boyes, 1987; Chandler, 1987). The adolescent's responses to evidence of conflicting knowledge claims become characterized by the assumption that "all hope for rationally guiding one's own actions is irretrievably lost" (Boyes & Chandler, 1992, p. 285).

With regard to adolescent egocentrism, Elkind (1967) has indicated that the egocentrism typical of the adolescent period emerges when an adolescent is aware of others' perspectives, but attributes his or her own self-focus to that of the other person. As Elkind explains, "It is this belief that others are preoccupied with his appearance and behavior that constitutes the egocentrism of the adolescent" (p. 1030). Both theoretical and empirical evidence exists suggesting that several of the negative behaviors that emerge during adolescence, such as unprotected sexual activity and driving while drunk, are brought about by this type of reasoning (e.g., Arnett, 1990; Elkind, 1967; Holmbeck, Crossman, Wandrei, & Gasiewski, 1994). Although the constructs of epistemic reasoning and adolescent egocentrism address distinct dimensions of social cognition, development in either area requires that others' perspectives be considered.

Social cognition appears to play an important role in adjustment during adolescence (Ford, 1982; Lapsley, 1993; Noam, Chandler, & Lalonde, 1995). For example, researchers have established links between deficits in social cognitive functioning and atypical behaviors (e.g., Demorest, 1992; Downey & Walker, 1989; Lenhart & Rabiner, 1995; Lochman & Dodge, 1994; Pellegrini, 1985). Adolescents with problematic behaviors, relative to their nondisordered peers, have been found (a) to be less skilled in interpersonal problem solving competence (e.g., Leadbeater, Hellner, Allen, & Arber, 1989; Lenhart & Rabiner, 1995), (b) to demonstrate immature moral reasoning (e.g., Chandler & Moran, 1990; Kohlberg, 1978; Lee & Prentice, 1988; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Trevethan & Walker, 1989), (c) to be deficient in role-taking (e.g., Chandler, 1973; Selman, 1980), and (d) to demonstrate developmental lags on measures of empathy (e.g., Cohen & Strayer, 1996; Schonert-Reichl 1993, 1994b; Waterman, Sobesky, Silvern, Aoki, & McCaulay, 1981). The findings from these studies are in concert in suggesting that understanding the links between social cognition and behavior are important for theory as well as for efforts to remediate social maladjustment (Chandler, Greenspan, & Barenboim, 1974; Crick & Dodge, 1994; Pellegrini, 1985; Yeates & Selman, 1989).

Although a number of researchers have found deficits in some of the social cognitive abilities of adolescents with problem behaviors (e.g., Chandler & Moran, 1990; Cohen & Strayer, 1996; Leadbeater et al., 1989; Lenhart & Rabiner, 1995; Schonert & Cantor, 1991), the assumption can not be made on theoretical or empirical grounds that development across all dimensions of social cognitive functioning are deficient among these youth. Indeed, as pointed out by Noam et al. (1995),

development across the domains of social cognition “should be viewed as a fundamentally interactive and dysynchronous process” (p. 424). This dysynchrony is hypothesized to result from individuals’ experiences with a variety of interactions across differing social domains that provide different opportunities for social cognitive growth that vary inter- as well as intra-individually. For example, in a study conducted by Lee and Prentice (1988) examining differences between delinquents and nondelinquents on multiple dimensions of social cognition, the researchers found that although delinquents scored significantly lower than their nondelinquent peers on a measure of moral reasoning, no differences between delinquents and nondelinquents emerged on either of the two measures used to assess empathy. Indeed, although the majority of researchers have found that adolescents with problem behaviors demonstrate deficiencies across a number of dimensions of social cognition in comparison to their peers without problem behaviors (e.g., Chandler & Moran, 1990; Lee & Prentice 1988; Lochman & Dodge, 1994; Schonert-Reichl, 1994b; Trevethan & Walker, 1989), there exist several studies in which differences have not been found (e.g., Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988). Clearly, it is important to examine developmental patterns across a variety of dimensions of social cognition among both typical and atypical populations in order to obtain a more comprehensive picture of the manner in which social cognition interacts with psychopathology.

A number of researchers have investigated associations between, and differences among, dimensions of social cognitive functioning in adolescents with problem behaviors in order to better understand the link between social cognition and behavior (e.g., Chandler & Moran, 1990; Lee & Prentice, 1988; Lochman & Dodge,

1994; Schonert-Reichl, 1994b; Trevethan & Walker, 1989). Researchers such as Dodge (e.g., Dodge & Schwartz, 1997; Lochman & Dodge, 1998) have found overwhelming support for a link between one dimension of social cognition--social information processing--and aggression in children. Indeed, in a recent review of the research on aggression and antisocial behavior, Coie and Dodge (1997) conclude, "Over three dozen studies have shown that, given ambiguous provocation circumstances, aggressive children are more likely than nonaggressive children to make a hostile interpretation of another's intentions" (p. 825). Such explorations have allowed for a fuller appreciation of the nature and function of social cognition. In general, findings from studies are in accord in suggesting a complex interplay between dimensions of social cognition and psychopathology.

The focus of the present study was an examination of two dimensions of social cognition--epistemic reasoning and adolescent egocentrism--during adolescence. The primary aim of the investigation was to compare the epistemic reasoning and adolescent egocentrism of adolescents with severe behavioral disorders with that of adolescents without any identified problem behaviors. A secondary aim of this study was to examine the nature of the relation between epistemic reasoning and adolescent egocentrism in order to shed light on the association between these two salient dimensions of adolescent social cognition. It is hoped that this examination will provide a more comprehensive portrait of the social cognitive reasoning of adolescents with problem behaviors in relation to their peers without problem behaviors. In addition to examining between-group differences, another aim of this study was to examine the associations between dimensions of social cognition and

dimensions of psychopathology (i.e., internalizing problems, externalizing problems, total problems) within the group of adolescent boys identified as having behavioral disorders and the group of adolescent boys without behavioral disorders in order to allow for a fuller appreciation of the nature of the relations between social cognition and psychopathology within specific groups.

In examining the link between social cognition and behavior in the present study, a developmental psychopathology conceptualization of social cognitive development in adolescence was adopted. One focus of a developmental psychopathological framework involves the “application of developmental principles to the study of high risk and deviant populations” (Cicchetti, 1989, p. 1) with the intent of gaining a clearer understanding of the developmental processes that lead to disordered behavior. One of the premises that underlie a developmental psychopathology perspective is the belief that knowledge of normal development is important for understanding disordered behavior. Moreover, developmental psychopathologists posit that research examining atypical development and behaviors can shed light on normative development (Cicchetti, 1993, 1989; Cicchetti & Cohen, 1995; Noam et al., 1995; Sroufe, 1990). For example, knowledge of maladaptive development can provide information regarding protective or mediating variables. Such information may also provide a more thorough understanding about mechanisms of development.

It should be noted that, within the developmental psychopathological tradition, research from a variety of fields (e.g., developmental psychology, clinical psychology, psychiatry, genetics, neuroscience, special education) is seen as potentially

informative for understanding disorders (Cicchetti & Toth, 1998). A developmental psychopathological framework is especially well-suited for examining the social cognitive reasoning associated with disordered behavior among both atypical and typical adolescents because it can allow for a bridge among the various disciplines (e.g., developmental psychology, clinical psychology, special education) concerned with groups of adolescents distinguished by their levels of problematic behaviors. In the present study, the two groups of adolescents were differentiated first by educational diagnosis (i.e., special education vs. general education) and second by clinical measures designed to clarify the specific nature of disordered behaviors (i.e., internalizing, externalizing, total problems behaviors).

Researchers in the field of developmental psychology have found that social relationships play an important role in the development of social cognitive abilities (Parker, Rubin, Price, & DeRosier, 1995). Specifically, it is in the context of interactions with others in which individuals are afforded opportunities to reason about social situations or experiences and thus experience the cognitive conflict associated with changes in social cognition (Hartup, 1986; Kruger, 1992; Youniss, 1987). Distinctions have been made among the sources that provide for social experiences (e.g., parents, siblings, families, peers, best friendships) as well as among the qualities that characterize these relationships (e.g., level of intimacy, loneliness, conflict, support) (e.g., Frey & Röthlisberger, 1996; Marcoen & Brumagne, 1985; Paterson, Pryor, & Field, 1995). With regard to relationship source, there is some research in support of the Piagetian supposition that, during childhood and adolescence, interactions with peers provide a more effective mechanism for social

cognitive development than interactions with parents or adults (e.g., Kruger, 1992). Yet, it should be noted that research exists that has found that parents are also an important relationship source for promoting social cognitive reasoning in both children and adolescents (e.g., Walker & Taylor, 1991). Additionally, researchers have established that, in general, more positive social relationships are associated with more adaptive levels of social cognitive functioning (Parker et al., 1995). Although it is known that social relationships from various sources (e.g., parents, peers, friends) are important to adjustment, a clear picture detailing the specific manner in which the quality and source of social relationships are associated with social cognitive development among adolescents exhibiting maladaptive behavior has not yet emerged. Given that one of the defining characteristics of adolescents with behavioral disorders is poor interpersonal relationships with both peers and adults (Kauffman, 1997; Meadows, Neel, Scott, & Parker, 1994), examining the relation between the quality of social relationships and social cognition in a disordered population characterized by their poor social relationships may provide some insight into the underlying social relational mechanisms associated with social cognitive development. Thus, another aim of this study was to examine the association between social cognition and social relationships.

In summary, as presented above, research is generally in accord in suggesting that adolescents with problem behaviors differ from their nondisordered peers across several areas of social cognitive functioning (e.g., Chandler & Moran, 1990; Cohen & Strayer, 1996; Leadbeater et al., 1989; Lenhart & Rabiner, 1995; Schonert & Cantor, 1991). Nevertheless, there exist some studies in which deficiencies in some areas of

social cognitive functioning among adolescents with problem behaviors have not been found (e.g., Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988). As noted by Noam et al. (1995), one can not quickly assume that because adolescents with disordered behaviors experience deficits in one domain of social cognitive reasoning that they also experience deficits across all domains of social cognitive reasoning. Thus, one purpose of the present study was to examine two distinct dimensions of social cognition that, to this author's knowledge, have not yet been examined among adolescents with severe problem behaviors. In order to do this, a developmental psychopathological framework was adopted so as to go beyond an examination of adolescent behavior among atypical populations, and attempt to identify the association between behavior and social cognitive structures of reasoning as this atypical group of adolescents attempt to organize information about their world. This approach will clarify associations between problem behaviors and dimensions of social cognitive reasoning so that a clearer picture can emerge identifying how social cognitive development proceeds among both typical and atypical adolescents.

In addition to examining between-group differences in social cognitive reasoning among adolescents with behavioral disorders and adolescents without behavioral disorders, this study includes an examination of the relations between dimensions of social cognition and dimensions of psychopathology (i.e., internalizing problems, externalizing problems, total problems). These relations are examined within each group so that the nature of the relations between these variables can be described as they appear for each subgroup. Moreover, because social relationships have been hypothesized to be responsible for development in social cognitive

reasoning (Parker et al., 1995), another purpose of this study was to examine the relation of epistemic reasoning and adolescent egocentrism to personal intimacy and group-integration with both peers and family among two groups of adolescents who differ in quality of interpersonal relationships. As previously noted, one of the defining characteristics of adolescents with behavioral disorders is poor interpersonal functioning with peers and adults. Thus, information about the nature of the relation between social relationships, as they vary by relationship source and quality, and social cognition among adolescents with behavioral disorders in relation to adolescents without behavioral disorders, is an important step towards clarification of the role that social relationships play in social cognitive development for both typical and atypical populations.

In order to provide the reader with background information relevant to the present investigation, a review of related literature is provided in the following sections. First, a description of the theory of epistemic reasoning during adolescence and a review of the existing research in this area are presented. Following this is background information on the theory and research regarding adolescent egocentrism. Next, research concerning the role that social relationships play in social cognitive development is presented. Finally, a description of the target population (i.e., adolescents with behavioral disorders) is provided. This chapter concludes with a statement of the problem investigated in this study, the significance of this research, and the hypotheses that guided this investigation.

Epistemic Reasoning

The construct of epistemic reasoning provides a way to describe how adolescents deal with conflicting information (Boyes, 1987; Boyes & Chandler, 1992; Chandler, 1975, 1987). Specifically, epistemic reasoning refers to the processes utilized by an individual for coming to terms with doubt brought about by competing knowledge claims. Epistemic development is described through the types of belief entitlement, or degree of doubt, held by an individual when confronted with contradictory sides of an issue. Boyes and Chandler (1992) describe this process of development in adolescence in the following manner:

the typical preadolescent moves from an initial stance of unqualified realism to a point in late adolescence or young adulthood where he/she can admit to the constructive character of all knowledge without abandoning hope for the possibility of rational consensus (p. 283).

This “soft developmental sequence” is determined both by the individual's construction and understanding of the competing issue, along with identification of the source of the conflict and the resolution processes that typically accompany each stance of epistemic reasoning (Boyes, 1987; Boyes & Chandler, 1992). Descriptions of each of the progressive stances are presented, in turn, below.

Epistemic reasoning has been found to proceed in a developmental fashion beginning in childhood with a stance of “naive realism” (Boyes & Chandler, 1992). At this level, sources of conflict are attributed to differential access to facts, therefore, any disagreement may be resolved simply by ensuring that one has access to the facts. At the next level, “defended realism”, opinions take on the role of initiating case-

specific doubts. Although certainty in most cases is still a possibility for the preadolescent through a process of referral to the facts, unresolved conflicts are dealt with by merely attributing them to differences of opinion (Boyes & Chandler, 1992). Following from this level of case-specific doubt, the adolescent enters a phase of all encompassing, or "generic doubt", where credit for conflict is laid upon the seemingly endless subjectivity of all knowledge. Because there is no possibility of arriving at epistemic certainty, the adolescent throws up his or her hands in the decision-making process and instead refers to either end of a dogmatic/skeptical axis for assistance in determining a resolution (Chandler, 1987). Specifically, those taking a dogmatic approach rely on something or someone thought to have infallible knowledge (e.g., God, experts, science) when attempting to decide what is right in a world filled with epistemic uncertainty. Those taking a skeptical stance act on the assumption that there is no possibility that they themselves, or for that matter, any other person regardless of position of authority, can determine a "right" decision. Typical skeptical reactions include "impulsivism (acting without thought), intuitionism (doing what affect demands), conformism (doing the done thing), and indifferentism (tossing a coin or acting on whim)" (Chandler, 1987, p. 151). The final level of development in coming to terms with the knowing process is "postskeptical rationalism." The individual reasoning from this level realizes that although absolute certainty is beyond his or her grasp, the weighing of alternatives and at least making a "better" decision becomes a possibility. Boyes and Chandler (1992) describe the achievement of this level as "the hard-won realization that direct access to the unmitigated truth is not required for rational decision making" (p. 285).

To date, only a few published studies exist that have explored epistemic reasoning during adolescence (e.g., Boyes, 1987; Boyes & Chandler, 1992; Chandler, Boyes, & Ball, 1990). Taken together, the findings from these investigations have shed light on the developmental process of adolescent epistemic reasoning, and thus have helped to delineate some of the common difficulties that occur among individuals traversing adolescence. The findings from the extant studies examining epistemic reasoning are reviewed below.

Chandler et al. (1990) conducted a series of three investigations exploring adolescent epistemic reasoning in relation to cognitive and social-emotional development. In Study 1, Chandler et al. set out to validate the use of the model of epistemic reasoning for describing the progression of viewpoints held by adolescents as they confronted competing claims to knowledge. These researchers also examined the relation between epistemic stances and the stages of cognitive development. The participants in their study included 70 adolescent boys and girls, from grades 8, 10, 11, and 12, who could be classified as either concrete or formal operational thinkers. The results indicated that adolescents' responses regarding matters of conflict about knowledge could be accurately described by one of three epistemic stances (i.e., defended realism, dogmatism/skepticism, postskeptical rationalism). In addition, level of epistemic reasoning was found to be positively associated with grade level. With regard to the relation between epistemic reasoning and cognitive development, the researchers found that whereas concrete reasoning was associated the epistemic stance of defended realism, formal operational reasoning was associated with the dogmatism/skepticism and postskeptical

rationalism stances. Overall, support for Chandler et al.'s proposed model of epistemic development describing the progression of epistemic stances held by adolescents as they reason about conflicting accounts of knowledge was found.

In Study 2, Chandler et al. (1990) explored the connection between identity development (i.e., identity statuses: diffused, foreclosed, moratorium, achieved) and epistemic stance in 61 of the adolescents who had participated in Study 1 (the remaining 9 adolescents were eliminated because they could not be assigned a single identity status). Identity status was assessed via a paper-and-pencil measure designed to identify adolescent's identity status categorization (i.e., Objective Measure of Ego-Identity Status; Adams, Shea, & Fitch, 1979). The findings supported Chandler et al.'s hypothesis in that less advanced levels of identity achievement were associated with reasoning from the stance of defended realism, whereas more advanced levels were associated with the relativized epistemic stances (i.e., dogmatism/skepticism, postskeptical rationalism). More specifically, adolescents displaying a less mature sense of identity achievement (i.e., diffused or foreclosed) were significantly more likely to reason from a stance of defended realism whereas those adolescents who had reached the moratorium or achieved levels of ego-identity status were significantly more likely to reason from the more advanced relativized epistemic postures of dogmatism/skepticism or postskeptical rationalism. It should be noted that in a related study, Boyes and Chandler (1992) further examined the link between epistemic reasoning and identity status by more specifically looking at the relation between the dogmatism/skepticism axis of generic doubt and identity status and found that, as hypothesized, the majority of adolescents who reasoned from a

skeptical orientation scored at an identity status of identity diffused or moratorium. Although Boyes and Chandler hypothesized that adolescents who displayed reasoning consistent with a dogmatic orientation would be more likely to score at the status of identity foreclosed, this pattern was not found.

In Study 3, Chandler et al. (1990) compared the epistemic stances held by 28 psychiatrically hospitalized adolescent boys and girls with clinical levels of social-emotional adjustment failure (e.g., conduct disorders, depression) to a comparison group of adolescents without social-emotional adjustment failure who were drawn from the original study sample described earlier. The two samples were matched on gender and age. The adolescents in the hospitalized sample were further divided into two groups: high-risk for suicide and low-risk for suicide. The results of the study indicated significant differences among the three groups in their levels of epistemic reasoning. Specifically, adolescents without social-emotional problems were found to reason at significantly higher levels of epistemic reasoning than those adolescents classified as high- or low-risk for suicide. The majority of adolescents from the high-risk and low-risk suicidal status groups reasoned from a stance of defended realism (i.e., 92% and 69%, respectively) whereas only 24% of the adolescents in the comparison group reasoned from this less advanced fashion. The remaining 76% of the adolescents in the control group reasoned from the relativized epistemic stances of dogmatism/skepticism and postskeptical rationalism.

In characterizing the reasoning most typical of the hospitalized adolescents in their study, Chandler et al. (1990) suggest that an epistemically naive adolescent, functioning at an epistemic level of defended realism believes that:

Either it must be assumed no one has as yet discovered the real truth of some particular matter, in which case those that presume to tell one what to believe or how to behave are exercising an entirely arbitrary authority, or while the simple truth is known by some, others nevertheless continue, out of simple ignorance or mean-spiritedness, to press their biased and wrong-headed case (pp. 388-389).

Chandler et al. (1990) posit that individuals with problems in the area of social-emotional adjustment might remain at lower levels of epistemic reasoning (i.e., defended realism) because such individuals have not yet determined an acceptable manner for interpreting the discrepancy of viewpoints encountered in social interactions. More specifically, they argue that the "mistrust, anger, and frustration" typical of the epistemic stance of defended realism is particularly characteristic of the reasoning of adolescents with chronic social-adjustment failure. Indeed, Chandler et al. found this to be the case in their sample of psychiatric in-patient adolescents. Chandler and colleagues suggest that "a relativized view upon the process of belief entitlement during the adolescent years is not only normative, but essential to the maintenance of a well-adapted relationship with others" (p. 392).

In summary, it appears that the theory of epistemic reasoning allows for a cogent description of the various views held by adolescents as they reason about conflicting viewpoints. The meager literature that exists indicates that adolescents identified with clinically significant social-emotional problems typically demonstrate immature levels of epistemic reasoning, such as defended realism, whereas nondisordered adolescents utilize more mature epistemic reasoning at a relativized

level (i.e., dogmatism/skepticism, postskeptical rationalism). Currently, little is known, however, about the processes utilized by adolescents from non-normative populations as they reason about matters involving conflicting information. Further research is clearly warranted to shed further light on the relation between epistemic reasoning and psychopathology if we hope to more fully understand the link between social cognition and social maladjustment. Thus, the present study is an attempt to enhance the existing knowledge base concerning epistemic reasoning among atypical populations through the examination of the reasoning processes used by adolescents identified as having severe behavioral disorders.

Adolescent Egocentrism

Theoretical Background

Building upon Piaget's conceptualization of egocentrism from a cognitive-developmental perspective (Inhelder & Piaget, 1958; Piaget, 1962), Elkind (1967) introduced two constructs--the imaginary audience and the personal fable--as an attempt to describe the egocentric thinking utilized by the typical adolescent (Elkind, 1967; Elkind & Bowen, 1979). More specifically, Elkind developed the construct of the imaginary audience as a way in which to illustrate an adolescent's expectation that he or she is the central focus of any social situation and that the audience's viewpoint parallels whatever view the adolescent holds. This perspective-taking failure, or under-differentiation between one's own perspective and that of another's, results in the adolescent's belief that his or her appearance and actions are the focus of everyone else's attention (Elkind, 1967). According to Elkind, an adolescent's "personal fable" emerges from this self-focus. Specifically, Elkind suggested that

when an adolescent perceives that everyone's thoughts are directed toward him or her, he or she comes to the conclusion that this focus is because of some infallible or invincible aspect of his or her person. Elkind (1967) describes this construct as a personal fable regarding one's "beliefs in the uniqueness of his feelings and of his immortality, ... a story which he tells himself and which is not true" (p. 1031). The personal fable is said to emerge from a failure of perspective-taking whereby the adolescent over-differentiates his or her self from others resulting in the view of one's self as uniquely different and special (Elkind, 1967, 1985b). The egocentric thinking associated with the constructs of the imaginary audience and personal fable has been theorized to lead to problem behaviors, such as delinquency and risk-taking, during adolescence (Elkind, 1967).

This cognitive account of egocentrism (i.e., failure of differentiation between the subject and object) is not limited to adolescence; it varies in form during each stage of cognitive development (Elkind, 1967). The sensori-motor period involves a failure of differentiation between objects and their sensory impressions so that for the infant, an object exists only if it is in his or her presence. Pre-operational egocentrism entails differentiation problems between symbols and their referents. Hence, the pre-operational child assigns symbols and words more explanatory power than they actually carry. The concrete operational form of egocentrism involves differentiation problems between mental constructions and perceptual givens. Accordingly, the child who has attained concrete operations mistakenly assumes that his or her mental constructions are equal to perceptual information. The formal operative form of egocentrism arises at the initial onset of formal operative thinking and involves over-

differentiation and under-differentiation failures between the focus of one's own thoughts and the thoughts of others (for a more detailed description of these stages, see Elkind, 1967).

Elkind (1967) put forth the constructs of the imaginary audience and personal fable as a way in which to connect the Piagetian cognitive-developmental structure of adolescent thinking (i.e., formal operative thought) to the affective and behavioral characteristics of adolescent development. Elkind theorized that these dimensions of egocentric thinking are brought about by new formal operative thinking available in early adolescence. He posited that this "adolescent egocentrism" later diminishes during middle adolescence as a result of both the consolidation of formal thought and experiences in the social realm. Although Elkind theorized a link between formal operative thought and adolescent egocentrism, empirical evidence does not unanimously support his claims. For instance, whereas some researchers have reported no relation between cognitive development and adolescent egocentrism (e.g., Lapsley, Milstead, Quintana, Flannery, & Buss, 1986; O'Connor & Nikolic, 1990), other researchers have suggested heightened levels of adolescent egocentrism during the concrete operational period (e.g., Goossens, 1984; Gray & Hudson, 1984) rather than at the initial onset of formal operations as hypothesized by Elkind.

Lapsley and others (Lapsley, 1985; Lapsley, FitzGerald, Rice, & Jackson, 1989; Lapsley, Jackson, Rice, & Shadid, 1988; Lapsley et al., 1986; Lapsley & Murphy, 1985; Vartanian & Powlishta, 1996) have argued against a strictly cognitive account of adolescent egocentrism on both theoretical and empirical grounds and

instead support a social cognitive-developmental framework for understanding the imaginary audience and personal fable. For instance, in a “new look” at the imaginary audience and personal fable, Lapsley and Murphy (1985) suggest that Selman’s (1980) Level 3 of interpersonal understanding, rather than attainment of formal operations, provides a more cogent way in which to describe the emergence of imaginary audience and personal fable during adolescence. According to Lapsley and Murphy, although the adolescent is able to imagine a third-party perspective, his or her lack of ability to coordinate outside perspectives sets the stage for imaginary audience and personal fable construction. Further, Lapsley and Murphy contend that Level 4 perspective-taking ability, which provides the adolescent “with the ability to coordinate all possible third-party perspectives” (Lapsley et al., 1989, p. 485) results in a decline in egocentrism.

The theoretical placement of adolescent egocentrism in the social cognitive-developmental context of interpersonal understanding has been examined empirically. To date, although studies have supported a positive association between Level 3 perspective-taking ability and heightened levels of the personal fable, a significant and positive relation has not been found between Level 3 perspective-taking ability and the imaginary audience (e.g., Jahnke & Blanchard-Fields, 1993; Vartanian & Powlishta, 1996). Nevertheless, Jahnke and Blanchard-Fields suggest that, in their study, the lack of significant findings concerning the imaginary audience may be due to the low reliability in their measure of imaginary audience (i.e., Adolescent Egocentrism Scale; Enright, Shukla, & Lapsley, 1980) evidenced among their sample.

Measurement of Adolescent Egocentrism

Researchers have utilized a variety of measures for assessing the constructs of the imaginary audience and personal fable. With regard to the imaginary audience, three self-report measures currently in use include the 12-item Imaginary Audience Scale (IAS; Elkind & Bowen, 1979), which is typically described as a measure of self-consciousness, the 5-item imaginary audience subscale of the Adolescent Egocentrism-Sociocentrism Scale (AES; Enright et al., 1980), and the 42-item New Imaginary Audience Scale (NIAS; Lapsley et al., 1989) developed in line with a social-cognitive conceptualization of adolescent egocentrism. Perhaps the most widely used self-report measures of the personal fable are the Personal Fable Subscale (5 items) of the AES (Enright et al., 1980) and the New Personal Fable Scale (NPFS; Lapsley, et al., 1989) which includes subscales for Invulnerability (14 items), Omnipotence (19 items), and Personal Uniqueness (13 items). It should be noted that the AES is typically used as a general measure of adolescent egocentrism (i.e., both imaginary audience and personal fable) rather than as a way in which to assess the personal fable per se. Empirical evidence exists supporting the reliability and validity of the aforementioned measures of imaginary audience and personal fable (e.g., Elkind & Bowen, 1979; Enright et al., 1980; Lapsley, et al., 1989; Lapsley et al., 1986; Schonert-Reichl, 1994a).

Adolescent Egocentrism and Behavior

Although the imaginary audience and personal fable are useful constructs for describing behaviors typical of all adolescents (e.g., over concern with appearance), these constructs have also been theorized to be associated with maladaptive

behaviors (e.g., vandalism, delinquency, unplanned teen pregnancy) (Elkind, 1967). Elkind (1985a) hypothesized that, for adolescents with disabilities or psychopathology (e.g., anorexia, diabetes, depression), the imaginary audience and personal fable would exacerbate existing problems. For instance, because the adolescent with anorexia has a focus on self-appearance, he or she would have a greater tendency to imagine that others are preoccupied with his or her appearance. Although, to this author's knowledge, there is no extant research that has directly examined differences in imaginary audience and personal fable between adolescents with established histories of problem behaviors and their peers without problem behaviors, empirical evidence supports an association between adolescent egocentrism and problematic behaviors in adolescence (e.g., Arnett, 1990; Baron, 1986; Garber, Weiss, & Shanley, 1993; Holmbeck et al., 1994; Schonert-Reichl, 1994a). Moreover, researchers have established connections between both internalizing and externalizing problem behaviors to dimensions of adolescent egocentrism. A discussion of some of the major findings regarding these relations is now presented.

Externalizing behaviors, such as risk-taking and recklessness in adolescence, have been linked to adolescent egocentrism (Arnett, 1992; Cvetkovich, Grote, Bjorseth, & Sarkissian, 1975; Elkind, 1978; Irwin & Millstein, 1986). More specifically, Arnett (1992) suggests that the construct of the personal fable "provides a potential framework for understanding and describing the role of cognitive factors in reckless behavior" (p. 353). The construct of the personal fable in particular, or belief in one's own invulnerability, omnipotence, and personal uniqueness, has been used by a

number of researchers as a way in which to explain adolescents' willingness and/or participation in drunk driving, unprotected sex, and drug and alcohol use.

With regard to risk-taking behavior, Arnett (1990) examined the perspectives of 181 adolescent boys (mean age = 17.4) concerning their drunk driving behavior in order to determine the relation between adolescent egocentrism and drunk driving. Arnett's measure of egocentrism was comprised of four items that dealt with probabilities of negative consequences for the specific behavior of driving while intoxicated (e.g., the likelihood of an accident from drunk driving) and prevalence of drunk driving among peers (e.g., the proportion of others 'your age' who drive while drunk). Responses were considered egocentric if the negative effects of drunk driving were underestimated and if the prevalence of drunk driving by peers was overestimated. Arnett found that the adolescent boys who had driven a car while drunk in the previous year were more likely to hold an egocentric perspective (i.e., greater belief of invulnerability with regard to negative consequences and higher estimation of proportion of peers who drive while drunk) regarding drunken driving behavior than the boys who had never driven a car while under the influence of alcohol. Arnett's findings thus suggest that important links exist between egocentric thinking and risky behavior during adolescence.

The imaginary audience dimension of adolescent egocentrism has also been found to be associated with risk-taking behavior. Using ten randomly selected items from the NIAS (Lapsley et al., 1989), Holmbeck et al. (1994) queried 300 high school and college students (ages 14 to 19) about their imaginary audience ideation and their knowledge and use of contraceptives. The researchers found that a lack of

contraceptive use among sexually-active adolescents was positively associated with imaginary audience ideation. It should be noted that although Holmbeck et al. also assessed personal fable ideation via a modified version of the NPFS (i.e., 6 items randomly selected from each of the 3 subscales on the NPFS), no significant findings emerged regarding the relation between the personal fable and contraceptive use.

In addition to the positive relation that has been found between dimensions of adolescent egocentrism and externalizing behaviors, adolescent egocentrism has been theorized to relate to internalizing behaviors as well. For example, Elkind (1985a) suggested that the construction of imaginary audiences by adolescents with disabilities could “contribute to the depression and social withdrawal” (p. 85) of these adolescents. Empirical evidence supports the association between adolescent egocentrism and internalizing behavior. For instance, in a study conducted by Baron (1986) investigating the association between adolescent egocentrism and depression among a group of 216 adolescent boys and girls (ages 12 to 17), level of depressive symptomatology was found to vary according to level of egocentrism as assessed via the 15-item egocentrism subscale of the AES (Enright et al., 1980). Specifically, adolescents reporting high levels of egocentrism were significantly more likely to express higher levels of depressive symptomatology than those adolescents reporting low egocentrism. To further examine the relation between depression and adolescent egocentrism, Baron categorized adolescents scoring one standard deviation above or below the mean on the AES into high and low egocentrism groups. In addition to the overall finding that girls scored significantly higher on the AES than boys, gender differences were also apparent in that girls with high egocentrism reported significantly

higher levels of depression than boys with high egocentrism. Because Baron utilized a composite score of adolescent egocentrism from the AES rather than the separate subscale scores for the imaginary audience and the personal fable, examination of the nature of the relation between the various dimensions of adolescent egocentrism to depression was prohibited.

In an attempt to address the shortcomings of Baron's (1986) study, Schonert-Reichl (1994a) examined both the imaginary audience and personal fable in relation to depressive symptomatology in a sample of 61 adolescent boys and girls (ages 12 to 17 years). To assess adolescent egocentrism, Schonert-Reichl utilized the IAS (Elkind & Bowen, 1979) to measure the imaginary audience and the NPFS (Lapsley et al., 1989) to measure the personal fable. Because of research findings indicating that adolescent girls report higher levels of depression than adolescent boys, Schonert-Reichl also examined gender differences. Results revealed a positive relation between imaginary audience and depression and a negative relation between personal fable and depression. Gender differences were found with regard to the relation between imaginary audience and depression. Specifically, whereas for girls, depression was positively related to the imaginary audience, no relation emerged between imaginary audience and depression among boys. Although Schonert-Reichl addressed the measurement problem evidenced in Baron's (1986) earlier research by including multidimensional measures of adolescent egocentrism, she did not, however, examine the relation between adolescent egocentrism and externalizing problems.

Garber et al. (1993) also took a multidimensional approach to examining the relation between depression and adolescent egocentrism by utilizing the IAS (Elkind & Bowen, 1979) to assess imaginary audience and the AES (Enright et al., 1980) to assess both the imaginary audience and personal fable. In a sample of 688 adolescent boys and girls in grades 7 through 12, Garber et al. found that both indices of imaginary audience and the measure of personal fable were positively correlated with four measures of depression (i.e., Beck Depression Inventory, BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Children's Depression Inventory, CDI; Kovacs & Beck, 1977; modified noncognitive version of BDI; modified noncognitive version of CDI). In accord with results of the research conducted by Schonert-Reichl (1994a) described above, a positive relation between imaginary audience and depression was found. Nevertheless, in contrast to Schonert-Reichl's findings regarding a negative relation between the personal fable and depression, Garber et al. found a positive relation between the personal fable and measures of depression. It should be noted, however, that Garber et al. did not examine their data for possible gender differences, thus it was not possible to determine the extent to which the findings were mediated by gender. In addition, as with Schonert-Reichl's research, Garber et al. did not examine externalizing problem behaviors in relation to imaginary audience or personal fable.

In summary, research findings are in accord in suggesting that the imaginary audience is related to depression among adolescent populations (Baron, 1986; Garber et al., 1993; Schonert-Reichl, 1994a). The specific nature of the relation between the personal fable and depression, however, is less clear. Specifically,

whereas some researchers have found a negative relation between the personal fable and depression (e.g., Schonert-Reichl, 1994a), other researchers have found a positive relation between these two constructs (Garber et al., 1993). Thus, it is important that researchers examine adolescent egocentrism from a multidimensional perspective in order to clarify the specific nature of the relation between separate dimensions of adolescent egocentrism and both internalizing and externalizing problem behaviors.

In addition to research findings indicating a significant positive association between risk behaviors and adolescent egocentrism, the dimensions of the imaginary audience and personal fable have been theorized to have adaptive features as well (Lapsley, 1993). Indeed, researchers have found that the imaginary audience and personal fable may function as protective factors in adolescence (e.g., Lapsley et al., 1989; Lapsley, Flannery, Gottschlich, & Raney, 1996). For example, in a study examining the relation between dimensions of the separation-individuation process in interpersonal relations (assessed via the Separation-Individuation Test of Adolescence; Levine, Green, & Millon, 1986) and dimensions of adolescent egocentrism among 169 adolescent boys and girls in grades 6, 8, 10, and 12, Lapsley et al. (1989) found the personal fable to have protective features against separation anxiety and engulfment anxiety. Specifically, the personal fable was found to be negatively associated with anxiety concerning engulfment (e.g., fear of relationships that threaten autonomy) and separation (e.g., anxiety concerning loss of a relationship with a significant other).

In contrast to many of the other studies just described, Lapsley et al. (1996) examined the relation of dimensions of the personal fable, assessed via the NPFS (Lapsley et al., 1989), to both internalizing (e.g., depression, suicidal ideation) and externalizing problematic behaviors (e.g., drug/alcohol usage, delinquent risk-taking), as well as to positive aspects of adjustment (e.g., mastery and coping, superior adjustment, self-worth) in a sample of 561 adolescent boys and girls in grades 6, 8, 10, and 12. Lapsley et al. (1996) found that the relation between personal fable and internalizing and externalizing behavior varied with regard to the different dimension of the personal fable that was being examined. Specifically, with regard to externalizing behaviors, invulnerability was positively associated with risk-taking behaviors (e.g., vandalism, fighting, stealing), frequency of drug and alcohol usage, and lifetime drug and alcohol usage, whereas omnipotence was negatively associated with frequency of drug and alcohol usage. For internalizing behaviors, omnipotence was negatively related to both depression and suicidal ideation.

In order to further examine the nature of the relation between adolescent egocentrism and problematic behaviors and adjustment, Lapsley et al. (1996) conducted a series of regression analyses, separately for adolescent girls and boys. For boys, Lapsley et al. found that the invulnerability component of the personal fable was predictive of delinquent risk-taking behavior (e.g., vandalism, fighting, stealing) and life time drug usage, and depression. Among both boys and girls, a sense of personal uniqueness was positively associated with depression whereas a sense of omnipotence was negatively associated with depression. Protective features of the dimensions of the personal fable were highlighted in that omnipotence was predictive

of greater self-worth, superior adjustment, and mastery/coping for both boys and girls. Thus, Lapsley et al.'s findings indicate that the dimensions of the personal fable serve both risk and protective functions. In general, Lapsley et al.'s findings suggest that the omnipotence component of the personal fable provides mainly protective features during adolescence whereas the invulnerability and personal uniqueness components appear to be associated more predominately with problem behaviors and maladjustment.

In sum, it would appear that the relation between adolescent egocentrism and behavior is a complex one. Although the constructs of the imaginary audience and personal fable have been identified to be sources of risk to positive adjustment during adolescence, these constructs have also been found to have positive, or protective features, in relation to adolescent development. On the one hand, the imaginary audience has been found to be positively related to both internalizing and externalizing problem behaviors (e.g., Garber et al., 1993; Holmbeck et al., 1994; Schonert-Reichl, 1994a). On the other hand, the personal fable has been found to have both positive and negative associations with internalizing and externalizing problem behaviors (e.g., Arnett, 1990; Garber et al., 1993; Lapsley et al., 1989; Lapsley et al., 1996; Schonert-Reichl, 1994a). No extant published research exists, however, that has examined both the imaginary audience and the dimensions of the personal fable (i.e., invulnerability, omnipotence, personal uniqueness) in relation to both internalizing and externalizing behaviors. Moreover, to date, although the imaginary audience and personal fable have been linked to both internalizing (e.g., depression) and externalizing behaviors (e.g., unprotected sexual activity, alcohol and

drug usage, drunk driving) among typical adolescents, research has not yet been conducted comparing groups of adolescents who significantly differ with regard to level of problem behaviors.

Because both theory (e.g., Arnett, 1992; Cvetkovich et al., 1975; Elkind, 1978; Irwin & Millstein, 1986) and research have linked internalizing and externalizing problems to dimensions of adolescent egocentrism (e.g., Arnett, 1990; Baron, 1986; Holmbeck et al., 1994; Lapsley et al., 1996; Schonert-Reichl, 1994a), one could hypothesize that maladjusted adolescents would exhibit higher levels of the imaginary audience and the personal fable than their typical peers. There exist two possible reasons for such a contention. First, adolescents with social maladjustment have been found "to display qualitatively distinct thinking that is immature in structure and biased in content" (Demorest, 1992, p. 211) across a variety of dimensions of social cognition, such as moral reasoning, interpersonal problem solving, role-taking, and empathy (e.g., Chandler, 1973; Chandler & Moran, 1990; Demorest, 1992; Kohlberg, 1978; Leadbeater et al., 1989; Lee & Prentice, 1988; Lenhart & Rabiner, 1995; Schonert & Cantor, 1991; Schonert-Reichl, 1993, 1994b; Selman, 1980; Trevethan & Walker, 1989; Waterman et al., 1981). Thus, because adolescents with problem behaviors exhibit deficits in other areas of social cognition, one would predict that these youth would also possess immature adolescent egocentrism in comparison to their typical peers. In this case, adolescents with problem behaviors would display higher levels of egocentric thought with regard to the personal fable and imaginary audience than their peers without problem behaviors.

A second reason for the supposition that adolescents with problem behaviors would exhibit more egocentric thinking than their typical peers concerns the relation between cognitive processes and social behavior. Adolescents with problem behaviors, by definition, participate in a high degree of internalizing and/or externalizing problem behaviors (e.g., delinquency, risk-taking, etc.). Moreover, the imaginary audience and the personal fable have been found to positively relate to both internalizing and externalizing problem behaviors (e.g., Arnett, 1990; Baron, 1986; Garber et al., 1993; Holmbeck et al., 1994; Lapsley et al., 1996; Schonert-Reichl, 1994a). Thus, given the longstanding belief that both social adjustment and social behavior are mediated by social cognitive processes, and given the positive relation between adolescent egocentrism and problem behaviors, one would predict that those adolescents who frequently participate in such behaviors would exhibit higher levels of adolescent egocentrism.

Although a clearer picture is developing with regard to the specific role that the dimensions of adolescent egocentrism play in adolescent development, an understanding of the nature of the relation between adolescent egocentrism and behavior is far from complete. Because the construct of adolescent egocentrism is multidimensional and has been found to relate to both internalizing and externalizing problems, it would be useful to examine the multidimensional aspects of adolescent egocentrism in relation to both internalizing and externalizing problem behaviors among two groups of adolescents who differ with regard to problem behaviors in order to develop a fuller appreciation of the manner in which these dimensions of social cognition relate to behavior during the adolescent age-period.

Adolescent Egocentrism and Social Relationships

What are the mechanisms or processes responsible for movement beyond the adolescent form of egocentrism? Emergence from the specific egocentric failures of adolescence is speculated to be brought about by "the conflict between the reactions which the young person anticipates and those which actually occur" (Elkind, 1967, p. 84). For example, an adolescent may believe that he or she is invulnerable until confronted with reality through experience that contradicts this belief (e.g., unplanned pregnancy, penalty for driving while drunk). Additionally, it is social interactions with both peers and adults that are thought to be responsible for transition beyond this adolescent stage of egocentrism (Elkind, 1967, 1985b; Lapsley, 1990). Specifically, Elkind (1978) has suggested that the imaginary audience would decline as adolescents "come to recognize that each person has his or her own preoccupations" (p. 130) and the personal fable would decrease "as young people begin to develop friendships in which intimacies are shared" (p. 132). As well, Lapsley's (Lapsley, 1990; Lapsley & Murphy, 1985) placement of the imaginary audience and personal fable within the social cognitive-developmental framework of interpersonal understanding suggests that social interactions result in the decline of egocentrism during adolescence. Indeed, as social cognitive constructs developed within the Piagetian framework, one would assume that development in the area of adolescent egocentrism would proceed from social interaction because of the cognitive conflict provided by such experiences. As yet, however, the role that social interactions play in the development of adolescent egocentrism remains unexplored.

In sum, although researchers have begun to explore the constructs of the imaginary audience and personal fable among typical populations in relation to adjustment, little is known about these dimensions of adolescent egocentrism in adolescents with problem behaviors. Therefore, the present investigation will yield a more comprehensive look at adolescent egocentrism than has been provided in past research by utilizing a developmental psychopathological framework in which to examine the constructs of the imaginary audience and personal fable as they exist among a group of maladjusted adolescents who differ in relation to their nondisordered peers by level of problem behavior. This exploration goes beyond identification of group differences in order to explore the connection between problem behavior and the multidimensional aspects of adolescent egocentrism.

The Significance of Social Relationships in Social Cognitive Development

The critical importance of social relationships for social and emotional development has been widely acknowledged in the literature (Asher, Renshaw, & Geraci, 1980; Bukowski, Hoza, & Bovin, 1993; Parker et al., 1995; Rubin, Bukowski, & Parker, 1997; Savin-Williams & Berndt, 1990). During adolescence, in particular, it is in the context of social relationships in which important social skills necessary for social development and emotional adjustment are learned (Berndt & Hoyle, 1985; Claes, 1992; East, Hess, & Lerner, 1987; Hartup, 1986; Parker & Asher, 1987; Savin-Williams & Berndt, 1990). For example, from a social cognitive-developmental framework, it is in the context of interactions with both peers and adults where individuals have an opportunity to hear viewpoints that contrast their own and thus experience cognitive conflict--the mechanism that has been identified as facilitating

development in social cognition (e.g., Kohlberg, 1976; Kruger, 1992; Walker, 1983).

Although social relationships with both family and peers are viewed as significant across development (Blyth, Hill, & Thiel, 1982; Frey & Rothlisberger, 1996), the opportunities provided for development during the adolescent time-period differ by relationship source (Larson, 1983; Savin-Williams & Berndt, 1990). For example, with regard to peers, during the period of adolescence, positive social experiences with peers have been linked to positive adjustment (e.g., Buhrmester, 1990; Claes, 1992; Parker et al., 1995; Vernberg, 1990) and social competence (e.g., Buhrmester, 1990; Paterson et al., 1995). With regard to family, although myths abound about the conflictual nature of adolescent–parental relationships (for a review see Steinberg, 1990), recent research indicates that adolescents' familial relationships are an important source of support (e.g., Frey & R thlisberger, 1996), as well as the development of self-esteem, social competence, and coping abilities (e.g., Paterson et al., 1995). As discussed in the literature, both peers and families provide important, yet differing contributions to development. Although overlap may exist in the contributions that each type of relationship (i.e., peer, family) makes to development, there exists an obvious distinction between the two (Larson, 1983; Savin-Williams & Berndt, 1990). Thus, in order to cast a broader net with which to capture the significance of social relationships for development in the social cognitive arena, both peer and familial relationships are considered to be important for research in this area because each relationship source may provide differing means necessary for promoting social cognitive development.

A Piagetian perspective lends support for the notion that social cognitive

development occurs in the context of social relationships. More specifically, Piaget proposed that social interactions with others provide children with the necessary experiences for cognitive conflict to occur. In a recent review of the research on the significance of peer relationships for child and adolescent development, Rubin et al. (1997) state that:

Developmental change occurs because differences of opinion provoke cognitive disequilibria that are sufficiently discomforting so as to elicit attempts at resolution. Each interactant must construct, or reconstruct, a coordinated perspective of the original set of ideas in order to reinstate a sense of cognitive equilibrium. (p. 12)

It was Piaget's (1962) contention that interactions with peers are more effective in promoting social cognitive development than interactions with adults because peer relationships are more equal than the relationships between children and adults. Thus, when conflict arises, the child is more likely to consider the perspective of a peer than that of an adult. Kruger (1992) found support for this contention in her research examining the effects of peer versus mother interactions on moral reasoning development among young girls (ages 7 to 10). Specifically, Kruger investigated 24 peer-dyads and 24 mother-child dyads and found that children's exchanges with peers were characterized as more active, spontaneous, and other-oriented than mother-child interactions which were characterized as more passive and self-oriented. In addition, at posttest, gains in moral reasoning indicated that girls in peer-dyads reasoned at significantly higher levels than girls in mother-child dyads. Moreover, active interactions, regardless of dyad, were associated with greater moral reasoning

at posttest.

It should be noted that not all types of social interactions promote social cognitive development. For instance, although cognitive conflict that occurs in the contexts of social interactions is important to social cognitive development, this type of conflict does not imply that a relationship must be conflictual in nature in order to ensure development. Indeed, Rubin et al. (1997) suggest that hostile interpersonal interactions are not likely to be effective in promoting growth because they are not likely to result in an interactive resolution to a conflict.

Theoretical expectations regarding the role of social relationships in promoting development in adolescent egocentrism have been put forth in the literature. As previously noted, Elkind (1967) suggested that intimate social interactions may be responsible for promoting movement beyond the adolescent form of egocentrism. More recently, Lapsley and other's (Lapsley, 1985; Lapsley et al., 1988; Lapsley et al., 1986; Lapsley & Murphy, 1985) placement of adolescent egocentrism within a social cognitive framework, and specifically within the domain of interpersonal understanding, suggests the importance of social interaction in development. Although the role that social relationships play in development in the social cognitive domain of adolescent egocentrism has been speculated, little research exists that has directly examined the association between social relationships and the constructs of epistemic reasoning and adolescent egocentrism. Thus, in order to increase our understanding of the manner in which social interactions promote development in social cognition, it would behoove researchers to more closely examine the relation between quality of adolescents' social relationships with both peers and families and

epistemic reasoning and adolescent egocentrism in order to more precisely discern the mechanisms responsible for movement to higher developmental levels. Moreover, adolescents with behavioral disorders provide a particularly efficacious group with which to examine qualitative dimensions of social relationships that may promote or impede social cognitive development because, as previously noted, one of the defining characteristics of these adolescents is difficulty with interpersonal relationships with both peers and adults.

Behavioral Disorders

For the purposes of the present investigation, the atypical population chosen for investigating the relation between the social cognitive constructs of epistemic reasoning and adolescent egocentrism and psychopathology consists of adolescents identified by individuals in special educational services as having severe behavioral disorders. In the U.S. Department of Education report of 1988, it was determined that 375,000 school age children and adolescents were identified as severely behaviorally disordered and were in need of special education services as a part of their public schooling (Cullinan, Epstein, & Sabornie, 1992). Currently the most active definition of a severe behavioral disorder is that used in the Individuals with Disabilities Education Act (IDEA, formerly the Education for All Handicapped Children Act of 1975). According to this definition, individuals identified with severe behavioral disorders demonstrate significant, long lasting problems in the area of social relationships and/or in the levels of their inappropriate behavior which adversely affects their educational performance. Moreover, this definition requires that it is the behavior of the individual, and not some other disabling factor (e.g., learning disability,

significantly low IQ, physical disability) that contributes to deficits in educational performance.

One important reason for investigating adolescents identified as having behavioral disorders is that national statistics indicate that this group of individuals comprise a significant proportion of the total school age population (e.g., estimated between 3% to 6%, Kauffman, 1997). In addition, because one of the defining characteristics of individuals with behavioral disorders is qualitatively deficient interpersonal relationships, the use of a standard definition for this population provides a way to identify a group of adolescents already characterized by their deficiencies in interpersonal relations and social-emotional adjustment (Meadows et al., 1994) and thus allows for a fertile examination of the links among social relationships, social cognitive processes, and psychopathology. As such, it would be expected that these adolescents would experience concomitant deficits in social cognitive reasoning because the mechanism hypothesized to promote social cognitive reasoning is positive social relationships. Yet, interestingly, as previously presented, little research exists regarding the social relationships of adolescents with behavioral disorders (see, for exceptions, Farmer & Hollowell, 1994; Sabornie & Kauffman, 1985; Vacc, 1968, 1972). As well, another area sorely lacking in the field of behavioral disorders is research examining the social cognitive reasoning of these youth.

The Social Cognitive Functioning of Adolescents With Problem Behaviors

Although, to this author's knowledge, there is no extant published research comparing the epistemic reasoning and adolescent egocentrism of adolescents with behavioral disorders to that of their non-disordered peers, research concerning the

relation between other dimensions of social cognition and maladjusted behavior is next presented in order to provide the reader with background information relevant to understanding the social cognitive functioning of adolescents with behavioral disorders.

One area of social cognitive functioning in which a vast empirical research literature exists delineating deficits and/or delays among individuals with problem behaviors in comparison to their peers without problem behaviors is in the domain of moral reasoning (e.g., Chandler & Moran, 1990; Gregg, Gibbs, & Basinger, 1994; Hudgins & Prentice, 1973; Lee & Prentice, 1988; Trevethan & Walker, 1989). For example, in a study conducted by Lee and Prentice (1988), although the authors found no differences in moral reasoning between subgroups of delinquent boys (i.e., psychopathic, neurotic, subcultural); as a whole, delinquents were found to reason at lower levels of moral reasoning than nondelinquents. Chandler and Moran (1990), taking a multidimensional approach to the assessment of moral maturity among 60 delinquent adolescents and 20 of their nondelinquent peers, found that delinquent boys were deficient across a number of dimensions of moral maturity (i.e., moral reasoning, interpersonal awareness, social convention understanding, socialization, autonomy) in comparison to their nondelinquent peers. In Trevethan and Walker's (1989) investigation of moral reasoning among psychopathic, delinquent, and nondisordered adolescents, delinquent adolescents, as well as incarcerated psychopaths, were found to reason at lower levels of both hypothetical and real-life moral reasoning than their nondelinquent peers. Thus, taken together, research examining the moral reasoning of adolescents with problem behaviors strongly

suggests that they are deficient in moral reasoning in comparison to adolescents without problem behaviors.

It should be noted that in the vast majority of research examining differences between adolescents with problem behaviors and their peers without problem behaviors, researchers have controlled for potential confounds. Specifically, many researchers (e.g., Blasi, 1980; Chandler, 1973; Chandler & Moran, 1990; Lee & Prentice, 1988; McColgan, Rest, & Pruitt, 1983) have statistically controlled for, and/or matched groups on variables which have been found to moderately correlate with social cognitive reasoning such as age, SES, and verbal ability. Such matching and/or statistical control allows for greater clarity in interpretation of group differences. Therefore, in the present investigation, data were collected with regard to SES, age, and verbal ability.

Research in the area of moral reasoning also includes investigations conducted specifically with adolescents identified with behavioral disorders in the public school system (e.g., Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Sigman, Ungerer, & Russell, 1983). These studies are in concert in suggesting that adolescents with behavioral disorders are deficient in their moral reasoning. For example, Schonert-Reichl (1994b), in a study investigating differences in moral reasoning among two groups of adolescent boys (i.e., adolescents with and without behavioral disorders), found that the boys with behavioral disorders were significantly lower in their principled moral reasoning than their non-disordered peers. Moreover, Schonert and Cantor (1991) found similar results, regardless of whether the adolescents with behavioral disorders received special educational services in an alternative or a

traditional school setting.

Researchers examining the social cognitive functioning of maladjusted youth have also investigated empathy (e.g., Cohen & Strayer, 1996; Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988) and social perspective-taking (e.g., Chandler, 1973; Sigman & Erdynast, 1988; Waterman et al., 1981). With regard to empathy, the majority of findings are in accordance in suggesting that adolescents with problem behaviors are less empathetic than their nondisordered peers (e.g., Cohen & Strayer, 1996; Ellis, 1982; Kaplan & Arbuthnot, 1985). Nevertheless, there exist a handful of studies in which no such differences have been found between deviant adolescents and their nondeviant peers (e.g., Kendall, Deardorff, & Finch, 1977; Lee & Prentice, 1988). Cohen and Strayer (1996) posit that one possible reason for the discrepancy in findings between studies examining empathy in adolescents with problem behaviors may be the result of methodological issues, such as inappropriate use of measures and sample selection.

Research examining social perspective-taking differences between adolescents with problem behaviors and adolescents without problem behaviors is especially relevant to the present study because this dimension of social cognitive functioning underlies both epistemic reasoning and adolescent egocentrism. A similar pattern to that of moral reasoning and empathy has been found in the research concerning the social perspective-taking ability of children and adolescents with problem behaviors (e.g., Chandler, 1973; Chandler & Moran, 1990; Waterman et al., 1981). More specifically, in concert with the research in the area of moral reasoning, children and adolescents with problem behaviors have been found to be significantly lower in their

social perspective-taking abilities than their nondisordered peers. For example, Waterman et al. (1981) examined the affective perspective-taking abilities of preadolescent boys with emotional disturbance in grades 5 and 6 and found them to be deficient in comparison to their nondisturbed peers. In a study examining the efficacy of a training program for promoting role-taking skills among delinquent youth, Chandler (1973) compared the social perspective-taking skills of early adolescent delinquent boys and their nondelinquent peers (ages 11 to 13). At pre-intervention, Chandler found the delinquents to be significantly lower than nondelinquents in their social perspective-taking skills. More recently, Chandler and Moran (1990) examined correlates of moral reasoning (e.g., social perspective-taking) among delinquent and nondelinquent adolescents, aged 14 to 17 years. Again, results indicated that delinquents were significantly lower than nondelinquents in social perspective-taking ability. As with the research reviewed herein concerning group differences in moral reasoning among maladjusted and adjusted youth, it should be noted that the majority of the studies examining differences between atypical and typical groups on empathy and social perspective-taking have controlled for, or matched on variables (e.g., SES, age, and verbal ability) identified as important correlates as a way in which to eliminate potential confounds when examining between group differences in social cognition.

Taken together, the general consensus of the findings from studies in which group comparisons have been made between maladjusted boys and their well-adjusted peers on moral reasoning, empathy, and social perspective-taking is that maladjusted youth are lower in social cognitive functioning than their typical peers

(e.g., Chandler, 1973; Chandler & Moran, 1990; Cohen & Strayer, 1996; Gregg et al., 1994; Hudgins & Prentice, 1973; Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Trevethan & Walker, 1989; Waterman et al., 1981). Yet, there exist a few studies that have found no differences between children and adolescents with problem behaviors and their peers without problem behaviors on various dimensions of social cognition, such as empathy (e.g., Kendall et al., 1977; Lee & Prentice, 1988). Therefore, as noted by Noam et al. (1995), it can not be assumed that social cognitive development is synchronous across multiple domains of social cognition for adolescents with maladjusted behaviors. Nonetheless, on the basis of research presented above, it is likely that adolescents with behavioral disorders differ from their nondisordered peers in the areas of epistemic reasoning and adolescent egocentrism. Indeed, the findings with regard to perspective-taking are especially suggestive that adolescents with problem behaviors may encounter difficulties in social cognitive domains requiring one to deal with multiple perspectives (e.g., epistemic reasoning, adolescent egocentrism).

The Social Relationships of Adolescents With Problem Behaviors

As noted earlier, the notion that social relationships are important for social and emotional adjustment has been well established in the literature (Asher et al., 1980; Bukowski et al., 1993; Parker et al., 1995; Rubin et al., 1997; Savin-Williams & Berndt, 1990; Vernberg, 1990). The social relationships of children and adolescents with problematic behaviors have been consistently noted as being of poor quality (Coie & Kupersmidt, 1983; Dishion, 1990; Dishion, Andrews, & Crosby, 1995; Dodge, 1983; Hinshaw & Melnick, 1995). For example, a number of researchers have found

aggressive children to be socially rejected and/or unpopular when rated in comparison to nonaggressive children by their peers (e.g., Dodge, 1983; Hinshaw & Melnick, 1995; Hymel, Bowker, & Woody, 1993).

A few investigations exist that have examined connections between maladjustment and peer relationships during adolescence. For example, Buhrmester (1990) examined the relation between adolescent friendships (i.e., friendship intimacy assessed via self-report and friends-ratings) and adjustment. In a sample of 70 adolescents, aged 13 to 16 years, both self-reported and friend-reported friendship intimacy were positively related to sociability and self-esteem, and negatively related to hostility and anxiety/depression. Buhrmester's findings suggest the importance of friendships to adjustment during adolescence. Moreover, Panella and Henggeler (1986) conducted a study examining the interactions of 30 well-adjusted, conduct-disordered, and anxious-withdrawn African-American adolescent boys, aged 15 to 18 years. The authors utilized an experimental laboratory setting in order to directly examine the social interactions of the boys with a friend versus a well-adjusted adolescent stranger. These authors reported that both adolescents with conduct disorders and anxious-withdrawn behaviors, in comparison to the adolescents in the well-adjusted group, displayed fewer socially skillful behaviors and demonstrated lower levels of emotionally positive affect (e.g., empathy) during their interactions with both friends and strangers.

Results, however, are not consistent in suggesting that adolescents with problem behaviors possess deficits across a number of dimensions of peer relationships (e.g., Sabornie & Kauffman, 1985; Schonert-Reichl, 1995). For example,

researchers have found that, although adolescents without problem behaviors rate their peers with problem behaviors low on indices of social acceptance, adolescents with problem behaviors are socially accepted by their peers with problem behaviors (e.g., Sabornie & Kauffman, 1985). Recent research also indicates that adolescents with problem behaviors have both social networks and friendships. Schonert-Reichl (1995), for example, examined the peer relationships and friendships of 31 adolescent boys and girls identified as having problem behaviors with those of a comparison group of 31 well-adjusted peers. Although her findings revealed that adolescents with problem behaviors reported fewer friends, and characterized their best friendships as having higher levels of conflict and betrayal and less companionship and recreation than those adolescents without problem behaviors, Schonert-Reichl did not find significant differences between the two groups with regard to their characterizations of their very best friendship on the variables of validation and caring, help and guidance, intimate exchange, and conflict resolution. Thus, these research findings suggest that although adolescents with problem behaviors may be socially rejected by their peers without problem behaviors, they are not rejected by their problematic age-mates and they do have friendships.

In summary, some research exists supporting the contention that children and adolescents with problem behaviors have peer relationships and friendships that are of lower quality than those of their peers without problem behaviors. In contrast, other research exists suggesting that adolescents with problem behaviors do not have poor social relationships with peers in comparison to their nonproblematic age-mates. For instance, although adolescents with problem behaviors may be socially rejected by

their well-adjusted peers, they also report having social relationships that they perceive as positive. Thus, further investigation of the peer relationships of adolescents with problem behaviors is necessary in order to increase our understanding of the quality of these social relationships.

With regard to family, the social relationships of adolescents with problem behaviors have been often described as deficient. For instance, these relationships have been found to have higher rates of conflict and communication problems in comparison to the familial relationships of nonproblematic adolescents (Henggeler, 1982). Aggression and coercion have also emerged as more likely features of the familial relationships of adolescents with problem behaviors, than of those of typical adolescents (Gibbs, 1987). In addition, attachment (i.e., trust, degree of alienation, communication) to mothers and fathers has been found to be negatively related to antisocial behavior. More specifically, lower levels of attachment to either parent have been associated with increased levels of both aggressive and nonaggressive antisocial behaviors (Marcus & Betzer, 1996). Taken together, the research depicts a rather negative portrait of the family relationships of adolescents with problem behaviors. Nevertheless, little is known about how the adolescent with problem behaviors perceives his or her relationships with family.

In sum, although research exists describing the social relationships of adolescents with problematic behaviors, to date there exist just a handful of studies that have examined the peer and family relationships of adolescents identified with behavioral disorders and in need of special educational services. Yet, on the basis of the nature of the label of "behavioral disorders" (i.e., significant, long-lasting problems

in the areas of social relationships and/or behavior), it can be hypothesized that the quality of their social relationships would be deficient in comparison to adolescents without behavioral disorders. Indeed, with regard to their relationships with peers, the scant research existing in this area indicates that adolescents identified as having behavioral disorders are not accepted by their nondisordered peers (Sabornie & Kauffman, 1985; Vacc, 1968, 1972), experience high rates of peer rejection (Sabornie, 1987; Vacc, 1968), and have social networks that are high in aggressive and disruptive behaviors and low in cooperation, leadership, and academic ability (Farmer & Hollowell, 1994). Although it should be noted that research suggests that individuals with behavioral disorders have poorer peer relationships than their nondisordered peers, there also exists evidence that these children and adolescents do have social networks and close friendships (Farmer, 1994; Farmer & Cairns, 1991; Farmer & Hollowell, 1994; Farmer, Stuart, Lorch, & Fields, 1993). In addition, researchers have found that adolescents with behavioral disorders are more accepted by their peers with behavioral disorders than by their peers without behavioral disorders (e.g., Sabornie & Kauffman, 1985). This latter finding is not surprising when one considers that the social networks of adolescents with behavioral disorders are often comprised of peers with problem behaviors (Farmer, 1994; Farmer & Hollowell, 1994). Thus, although the adolescent with behavioral disorders may be socially rejected by his or her nondisordered peers, it can not be assumed that he or she does not have a friendship network.

The research that exists regarding the familial relationships of adolescents with behavioral disorders reveals a pattern somewhat similar to that found in the research

on peer relationships. More specifically, family interactions of adolescents with behavioral disorders have been characterized as highly negative. Kauffman (1997) describes the interactions of families of aggressive children as including “a pattern of punishment, negative reinforcement, and coercion” (p. 228). Thus, although little is known about the family relationships of adolescents with behavioral disorders, what is known about the family relationships of other adolescent groups with problem behaviors (Gibbs, 1987; Henggeler, 1982; Marcus & Betzer, 1996) indicates that adolescents with behavioral disorders would be likely to have lower quality familial relationships than their non-disordered peers.

In summary, although adolescents with problem behaviors may report having peer relationships that they identify as close (e.g., Schonert-Reichl, 1995), the quality of these relationships may differ in ways important to social cognitive development (Claes, 1992). Because social relationships with families and peers may provide both similar and unique contributions to social cognitive development, examining the role of the quality of social relationships with peers and family to the development of social cognitive abilities of adolescents with behavioral disorders may provide important information regarding the social relational factors associated with social cognitive development among both typical and atypical populations.

Statement of the Problem

As can be surmised from the preceding review, epistemic reasoning and adolescent egocentrism may provide fruitful constructs for shedding light on the social cognitive processes that mediate social behaviors during adolescence (e.g., Baron, 1986; Boyes & Chandler, 1992; Chandler et al., 1990; Garber et al., 1993; Holmbeck

et al., 1994; Lapsley et al., 1989; Lapsley et al., 1996). Moreover, although researchers have found links between maladjustment and deficits in a variety of dimensions of social cognitive functioning, such as empathy, perspective-taking, and moral reasoning (e.g., Chandler, 1973; Chandler & Moran, 1990; Cohen & Strayer, 1996; Gregg et al., 1994; Hudgins & Prentice, 1973; Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Trevethan & Walker, 1989; Waterman et al., 1981), there exists a dearth of research examining the relation of maladjustment to epistemic reasoning and adolescent egocentrism. In order to further understand the nature of the relation between social cognition and maladjustment, research is needed that examines the relation between social cognitive reasoning and type of maladjusted behavior (i.e., internalizing, externalizing, total problems). Furthermore, because social interactions have been hypothesized to be one of the mechanisms responsible for movement to higher levels of social cognition (Elkind, 1967; Kohlberg, 1976), distinguishing the association between social cognitive reasoning and social relationships with peers and family in both typical and atypical populations may provide an important addition to existing research.

Hence, a comparative study of two groups of adolescent boys, ranging in age from early to middle adolescence (i.e., ages 12 to 19), was conducted to examine epistemic reasoning and adolescent egocentrism among adolescent boys with behavioral disorders in relation to their peers without behavioral disorders. In addition, the relation between social cognitive reasoning and type of problem behavior was explored. As a secondary focus, an investigation of the association between social cognitive reasoning and social relationships with peers and family was made.

Significance of the Study

In order to gain a clearer understanding of the relation between social cognition and behavior, social cognitive constructs that have linked adolescent reasoning to behavior must first be identified. As previously described, because the constructs of epistemic reasoning and adolescent egocentrism have been theorized to be constructs that provide this insight, they seem particularly well-suited for examining the social reasoning of youth with problem behaviors. Specifically, although considered "normal" in adolescence, the reasoning associated with immature epistemic reasoning and adolescent egocentrism may also be described as "distorted." Thus, it would be informative to examine how these normative "distorted" ways of thinking appear among adolescents described as behaviorally disordered.

A number of researchers have demonstrated that deficits or delays among different dimensions of social cognitive development (e.g., perspective-taking, moral reasoning, interpersonal problem-solving) are related to problems in adjustment (e.g., Chandler & Moran, 1990; Kohlberg, 1978; Leadbeater, et al., 1989; Lenhart & Rabiner, 1995; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Selman, 1980; Trevethan & Walker, 1989). Research along these lines, however, has left unanswered questions regarding the specific nature of the relation between adjustment and social cognition. Specifically, although maladjusted adolescents may be deficient or delayed in some domains of social cognitive abilities, we do not as yet understand how development looks for these adolescents across various domains (e.g., epistemic reasoning, adolescent egocentrism). An investigation examining epistemic reasoning and adolescent egocentrism will provide a clearer picture of the

meaning making process for these adolescents. Moreover, examining these social cognitive abilities in a sample of adolescents with problem behaviors provides one way in which to shed light on the link between social cognition and behavior. The purpose of the present study was to examine the social cognitive abilities of adolescents with and without behavioral disorders that may impact on their reasoning about their social world. In addition, because social relationships are important for social cognitive development and because adolescents with behavioral disorders have, by nature, problematic social relationships, this study explored the nature of the relation between dimensions of social cognitive reasoning (i.e., epistemic reasoning, adolescent egocentrism) and social relationships.

Hypotheses

Although no research exists that has explored epistemic reasoning and adolescent egocentrism among adolescents identified for special educational services as having behavioral disorders, a series of hypotheses was developed for the present investigation based on a review of related literature. The intent of the hypotheses is to guide this study in an attempt to gain a clearer picture of social cognitive development among maladjusted adolescents. The series of hypotheses is described, in turn, below.

The first set of hypotheses concerns the specific nature of group differences in social cognition and social relationships. Past research has typically reported lower social cognitive abilities among adolescents with problem behaviors in comparison to their nonproblematic peers (e.g., Chandler, 1973; Chandler & Moran, 1990; Cohen & Strayer, 1996; Gregg et al., 1994; Hudgins & Prentice, 1973; Kaplan & Arbuthnot,

1985; Lee & Prentice, 1988; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Trevethan & Walker, 1989; Waterman et al., 1981). Therefore, the first hypothesis regarding epistemic reasoning is that it will be lower in a group of adolescent boys identified as having behavioral disorders than in a nondisordered comparison group, as indicated by their responses on an interview measure assessing epistemic reasoning. To anticipate more specifically the hypothesized pattern of epistemic stances to be used by adolescent boys with behavioral disorders, Chandler et al's. (1990) findings regarding the epistemic stances held by adolescents from a clinical sample were considered. Based on their research findings indicating that the majority of adolescents in their clinical sample reasoned from a stance of defended realism, it is anticipated that the boys with behavioral disorders in the present investigation will be more likely than their nondisordered peers to continue to view matters of conflict from a stance of defended realism whereby any social partner espousing a conflicting view would be discounted as either wrong or uninformed. Although Chandler et al. (1990) did not report information concerning the specific form of either dogmatic or skeptical reasoning espoused by adolescents in the clinical sample who reasoned from the dogmatic/skeptical axis of epistemic doubt, in the present study it is anticipated that those boys with behavioral disorders who become aware of the relativized nature of knowledge will be more likely to view and resolve conflict from a skeptical, as opposed to dogmatic stance. This contention is based on the notion that adolescents with behavioral disorders have serious interpersonal problems and demonstrated difficulty with authority (Meadows et al., 1994). Thus, these boys would be less likely to support a dogmatic claim whereby someone or something could

provide an infallible explanation for the overwhelming doubt experienced in life. In contrast, it seems more likely that the skeptical approach, whereby no one has any insight concerning the way in which to resolve conflict, would be utilized. Finally, as was found with the Chandler et al. clinical sample, it is anticipated that few of the boys with behavioral disorders in the present study will display reasoning characteristic of the more advanced epistemic stance of postskeptical rationalism.

The second hypothesis concerns the examination of differences between adolescents with and without behavioral disorders on the various dimensions of adolescent egocentrism. To date, no extant research exists that has examined the dimensions of adolescent egocentrism (i.e., imaginary audience, personal fable) among disordered adolescent populations. However, based on theoretical assumptions (Elkind, 1967), as well as previous research findings in other areas of social cognition (e.g., moral reasoning, interpersonal understanding) indicating delays among adolescents with problem behaviors (e.g., Chandler, 1973; Chandler & Moran, 1990; Schonert & Cantor, 1991; Waterman et al., 1981), it is expected that adolescents with behavioral disorders will report higher levels of egocentrism (indicating more immature reasoning) as assessed by self-reports of imaginary audience and personal fable (i.e., invulnerability, omnipotence, personal uniqueness).

The third hypothesis regarding group differences is that adolescent boys with behavioral disorders will report lower perceptions of personal-intimacy and group-integration in their relationships with peers and family than adolescent boys without behavioral disorders. This hypothesis is based, in part, on previous research findings indicating that the social relationships of problematic youth are of poor quality (e.g.,

Coie & Kupersmidt, 1983; Dishion, 1990; Dishion et al., 1995; Dodge, 1983; Hinshaw & Melnick, 1995) and, in part, because one of the defining characteristics of adolescents with behavioral disorders is problems in interpersonal relationships with peers and adults.

A second set of hypotheses for this study concerns the nature of the relations among the social cognitive variables (i.e., epistemic reasoning, imaginary audience, invulnerability, omnipotence, personal uniqueness) and relations between the social cognitive variables and the social relational variables (i.e., peer personal-intimacy, peer group-integration, family personal-intimacy, family group-integration). First, it is expected that lower epistemic reasoning will be related to higher adolescent egocentric ideation among both groups of adolescent boys. This pattern of association is expected because researchers have found significant relations between other dimensions of social cognition (e.g., Chandler & Moran, 1990; Davis & Fanzoi, 1991) and because underlying both epistemic reasoning and adolescent egocentrism is the adolescent's ability to perspective-take. Next, based on both theoretical expectations (e.g., Elkind, 1967; Lapsley, 1985; Lapsley et al., 1988; Lapsley et al., 1986; Lapsley & Murphy, 1985) and the importance of social relationships for social cognitive growth (Parker et al., 1995; Rubin et al., 1997), it is hypothesized that boys who reason from the more advanced epistemic stances will view their relationships with peers and family as more intimate and integrated. In addition, it is anticipated that those boys who have lower levels of adolescent egocentric ideation will perceive their relationships with peers and family as more intimate and integrated.

Finally, although previous research is not clear as to the specific nature of the

relation between various dimensions of psychopathology (i.e., internalizing problems, externalizing problems) and the social cognitive variables of interest in the present study, hypotheses were developed based on related research findings and theoretical expectations. Hence, because of the overwhelming findings in previous research indicating negative associations between adjustment and social cognitive functioning (e.g., Chandler, 1973; Chandler & Moran, 1990; Cohen & Strayer, 1996; Gregg et al., 1994; Hudgins & Prentice, 1973; Kaplan & Arbuthnot, 1985; Schonert & Cantor, 1991; Schonert-Reichl, 1994b; Trevethan & Walker, 1989; Waterman et al., 1981), in the present study it is hypothesized that higher levels of psychopathology will be associated with less mature levels of social cognition (i.e., lower epistemic reasoning, higher levels of egocentrism). More specifically, because previous researchers have found lower levels of epistemic reasoning among adolescents characterized by their high levels of problem behaviors (Chandler et al., 1990), it is expected that lower epistemic reasoning will be associated with higher levels of problem behaviors. In addition, because researchers have found positive associations between the dimensions of adolescent egocentrism and some types of internalizing (e.g., depression) and externalizing problem behaviors (e.g., drunk driving, vandalism, unprotected sex) among nondisordered populations (e.g., Arnett, 1990; Baron, 1986; Garber et al., 1993; Holmbeck et al., 1994; Schonert-Reichl, 1994a), it is anticipated that adolescents with greater numbers of problem behaviors will have greater tendencies to construct imaginary audiences and personal fables.

Method

Participants

The sample for this study consisted of 31 adolescent boys with behavioral disorders and 32 of their male peers without behavioral disorders. The participants ranged in age from 12.1 to 19.6 years with a mean of 14.8 ($SD = 1.78$ years). Adolescent boys were recruited from five schools within a large urban school district in Western Washington State that had special education programs designed to serve adolescents with behavioral disorders in grades six through twelve. Only boys were solicited for participation in the present study because, of the total number of adolescents with behavioral disorders in the five schools, only four were girls. This is in accord with findings from previous research indicating that only a small proportion of the youth identified as having behavioral disorders in the public school system are girls (Bussing, Zimma, Belin, & Forness, 1998; Cullinan et al., 1992; McIntyre & Battle, 1998).

Adolescent boys were solicited for participation in order to form two distinct groups: adolescent boys with behavioral disorders and adolescent boys without behavioral disorders. Participants in the group of adolescent boys without behavioral disorders were selected to approximate, as closely as possible, those boys with behavioral disorders on age and race. Descriptions of each group as well as the process of recruitment are discussed, in turn, below.

Adolescent Boys With Behavioral Disorders

Each of the participants selected for inclusion in the “behavioral disorders” group met the criteria specified in the handbook of the Washington Administrative

Code: Rules and Regulations for Special Education Programs (1995) for identifying students as having “severe behavioral disabilities.”¹ It should be noted that the state definition of “behavioral disorders” precludes designation of any other handicapping condition (e.g., mental retardation and learning disabilities). The state criteria for identifying students as having behavioral disorders are as follows:

Students who are seriously behaviorally disabled are those who exhibit over a long period of time and to a marked degree, one or more of the following characteristics, which adversely affects their educational performance: (a) An inability to learn which cannot be explained by intellectual, sensory, or health factors; (b) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) Inappropriate types of behavior or feelings under normal circumstances; (d) A general pervasive mood of unhappiness or depression; or (e) A tendency to develop physical symptoms or fears associated with personal or school problems (Ch. 28A.155, 95-21-055 (Order 95-11) § 392-172-118).

Within each of the five schools, all male students having the label of “behavioral disorders” were approached for inclusion in the study. In accordance with state policy, these adolescent boys had all been identified as having behavioral disorders, and hence in need of special education services, by a district multidisciplinary assessment team who utilized the state criteria delineated above for this disability category.

¹ Although the terminology utilized in the Washington State definition is severe behavioral disabilities, for parsimony, the term behavioral disorders will be used throughout this dissertation.

Adolescents with any evidence of a thought disorder or psychosis were eliminated from study participation because it was believed that they would have difficulty adequately completing the questionnaires and interview utilized in this research.

Participant selection proceeded in the following manner. Initially, approval was obtained from both school administrators and special education teachers. Following this, a total of 39 adolescent boys with behavioral disorders who were eligible for participation were individually approached and provided with both a written and verbal description of the study's purpose (see Appendix A). At this time, of the 39 adolescent boys solicited for participation, four reported that they were not interested in being research participants. Thus, letters describing the research study along with parental consent forms (see Appendix B) were distributed to the remaining 35 adolescent boys. As an incentive for students to return their permission slips, boys were told that those students who returned signed consent forms, regardless of whether or not parental permission was granted, had an opportunity to win a \$15.00 gift certificate from a local music store that would be awarded upon completion of the study. Of the 35 students with behavioral disorders who were given permission slips, 33 (94%) returned their signed parental permission slips and all of these students received parental consent to participate. Of these adolescent boys, one was withdrawn from the study because he was absent during the data collection phase and another one was dropped from analyses because of a preponderance of incomplete data. Thus, complete data were available for 31 of the adolescent boys with behavioral disorders.

The 31 adolescent boys with behavioral disorders ranged in age from 12.2 to 19.6 years, with a mean of 14.8 years ($SD = 1.90$ years). The ethnic composition of

the sample was as follows: 64.5% African American, 25.8% White, and 9.7% Asian American. Based on the Hauser-Warren Socioeconomic Index for occupational status for head of households (Hauser & Warren, 1997), the sample's socioeconomic status (SES) ratings ranged from 21.75 to 61.07, with a mean of 34.26 ($SD = 10.48$). Examples of occupations close to the mean are managers of food service and lodging establishments (33.82), communications equipment operators (34.39), and supervisors of carpenters and related work (34.47). Forty-two percent of the adolescent boys with behavioral disorders reported living in two-parent homes (i.e., 35.5% in biologically intact families, 6.5% in blended families), 35.5% reported living in single-parent homes, and 22.5% reported living with adults other than their parents (e.g., grandparents, foster parents). Receptive vocabulary scores, as measured by the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981), ranged from 53 to 117, with a mean of 79.55 ($SD = 15.84$). Within this group of adolescent boys, verbal expressivity, operationalized in the present study by number of words verbalized in response to questions in the Epistemic Doubt Interview, ranged from 533 to 3566 words, with a mean of 1358.74 words ($SD = 614.93$).

Adolescent Boys Without Behavioral Disorders

One critical concern in the present study was that the individuals in the two groups of participants--adolescent boys with behavioral disorders and adolescent boys without behavioral disorders--would be similar to one another on salient and relevant demographic characteristics (i.e., gender, age, ethnicity, SES) and different from one another with regard to their level of problem behaviors. In order to address this concern, the following process was used to obtain a list of potential participants

for inclusion in the comparison group. At each of the five schools, access to a list of each student's name, gender, date of birth, ethnicity, and status with regard to special education (i.e., whether or not the student was currently receiving special education services) was granted. A thorough search of this list was conducted in order to identify a list of potential participants that would approximate the adolescent participants with behavioral disorders on gender, ethnicity, and age. Additionally, all of the potential participants who were currently receiving special education services were excluded from the list of students who were eligible for inclusion in the comparison group. Administration personnel and school counselors were given the resulting list of eligible students' names and asked to identify any students who had excessive amounts of behavioral referrals. These students were removed from the potential pool of participants. This process resulted in the identification of 42 students as potential participants for inclusion in the study. Each boy was approached on an individual basis for research participation. After receiving a description of the purpose of the study in a manner similar to that given to the adolescent boys with behavioral disorders (see Appendix C), those adolescent boys who indicated an interest in participating in the study were given a parent information letter and consent letter (see Appendix D). At this time potential participants were told that those students who returned signed consent forms, regardless of whether or not parental permission for participation was granted, would be placed in a drawing for a \$15.00 dollar gift certificate from a local music store that would be awarded upon completion of the study. Of the 42 students without behavioral disorders who were given parental

permission slips, 34 (81%) returned consent letters, and 32 (76%) received parental permission to participate in the study.

The students without behavioral disorders ranged in age from 12.1 to 18.5 years with a mean of 14.9 ($SD = 1.68$ years). With regard to ethnic composition, participants identified themselves as 50% African American, 37.5% White, and 12.5% Asian American. Based on the Hauser-Warren Socioeconomic Index for occupational status for head of households (Hauser & Warren, 1997), the sample's socioeconomic status (SES) ratings ranged from 16.42 to 80.53, with a mean of 39.60 ($SD = 18.32$). Examples of occupations close to the mean are dieticians (39.65), transportation ticket and reservations agents (39.65), and electronic repairers (38.38). Fifty-three percent of these boys reported living in two-parent homes (i.e., 43.8% in biologically intact families, 9.4% in blended families), 40.6% reported living in single-parent homes, and 6.3% reported living with adults other than their parents (e.g., grandparents). Receptive vocabulary scores, as measured by the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981), ranged from 40 to 139, with a mean of 100.50 ($SD = 23.13$). Within this group, verbal expressivity, as calculated by number of words verbalized in response to questions from the Epistemic Doubt Interview, ranged from 735 to 3072 words, with a mean of 1628.19 words ($SD = 617.56$).

As previously mentioned, effort was made to select adolescents for participation in the present study so that groups would be comparable in terms of age and ethnicity. Analyses indicated that the groups did not differ significantly in age, $t(61) = -.17$, $p = ns$, or racial composition, $\chi^2(2, N = 63) = 1.37$, $p = ns$.

An independent samples t test revealed that the two groups were not significantly different from one another with regard to verbal expressivity, $t(61) = -1.73$, $p = ns$. In contrast, adolescent boys with behavioral disorders scored significantly lower ($M = 79.55$, $SD = 15.84$) than adolescent boys without behavioral disorders ($M = 100.5$, $SD = 23.13$) on receptive vocabulary as assessed via the Peabody Picture Vocabulary Test-Revised, $t(55) = -4.21$, $p < .01$.

Group differences in level of SES were also explored. In an independent samples t test, no significant differences were found between the two groups on SES, $t(49) = -1.35$, $p = ns$. It should be noted that eight of the participants with behavioral disorders could not be assigned an SES rating because they reported that they were living in either a foster home or with parents or grandparents who were unemployed. In comparison, only one adolescent without behavioral disorders could not be assigned an SES rating because he reported that he was living with grandparents who were unemployed. Therefore, due to the greater preponderance of missing SES data evidenced among the group of adolescent boys with behavioral disorders in comparison to that evidenced among the group of boys without behavioral disorders, the findings suggesting the equivalency of the two groups on SES must be interpreted with caution.

Measures

Background Information

A questionnaire was designed to obtain background information (age, grade, ethnicity, family composition, parents' occupations) from participants in the present

study (see Appendix F). This information was utilized for describing participants as well as for determining socioeconomic status.

Socioeconomic Status

Socioeconomic status (SES) was assessed using the Hauser-Warren Socioeconomic Index for occupational status for head of households (Hauser & Warren, 1997). This index is based on the 1990 U.S. census codes and provides a list of occupational titles along with corresponding scores reflecting the social status of each occupation. To obtain socioeconomic status, each participant was requested to describe the occupation held by the parent that was the head of his household. The description of the occupation was then coded according to the index of occupational titles provided by Hauser and Warren. Following this, codes for occupational titles were translated into scores for SES using the index for total scores for the occupational socioeconomic status for all workers. Scores on this index range from 7.13 (e.g., shoe machine operators) to 80.53 (e.g., physicians).

Receptive Vocabulary

Receptive (hearing) vocabulary was assessed using the Peabody Picture Vocabulary Test-Revised (PPVT-R), Form L (Dunn & Dunn, 1981). As described in the introduction, a number of previous researchers who have examined differences between typical and atypical populations across a variety of dimensions of social cognitive functioning have utilized a measure of verbal ability in order to control for differences between groups because of the positive moderate correlation between social cognitive functioning and verbal ability (e.g., Gregg et al., 1994; Lee & Prentice, 1988; Lenhart & Rabiner, 1995). As noted by Dunn and Dunn, the PPVT-R provides

“a quick estimate of one major aspect of verbal ability” (p. 2), that is, receptive vocabulary. On this measure, participants are asked to select which of four possible pictures “best tells the meaning of the word” stated by the administrator. This measure yields raw scores ranging from 1 to 175 that can be converted to standard score equivalents, with a mean of 100 and a standard deviation of 15. Adequate validity (i.e., construct and content) and reliability (e.g., split-half reliability coefficients ranging from .78 to .88 for the normative sample of adolescents 12 to 19 years of age) have been reported for the PPVT-R (Dunn & Dunn, 1981).

Verbal Expressivity

In the present study, data with regard to verbal expressivity were collected as a way in which to assess group differences on the amount of participation in the Epistemic Doubt Interview (EDI, Boyes, 1987). Verbal expressivity was operationalized by counting the number of words participants used in response to probe questions from the EDI. These word counts were obtained from transcribed responses to the EDI. Only those replies made by each adolescent that were in direct response to probe questions from the EDI were used in determining the counts. Word counts ranged from 533 to 3566 words, with a mean of 1495.60 words ($SD = 626.18$).

Problem Behaviors

Problem behaviors include a range of internalizing, externalizing, and co-morbid patterns of behavior. In the present investigation, two measures were utilized to assess adolescents’ degree of problem behavior: the problem behavior portions of both the Youth Self-Report (Achenbach, 1991b) and the Teacher’s Report Form (Achenbach, 1991a). Descriptions of each measure are presented, in turn, below.

Self-reported problem behaviors. The Youth Self-Report (YSR; Achenbach, 1991b) is a measure intended to elicit the responses of youth concerning their social competencies and problem behaviors. For the purposes of the present investigation, only the problem behavior portion of the YSR was included in this study. This portion consists of 119 items (i.e., 16 socially desirable items and 103 problem behavior items). Items are rated on a 3-point scale (0 = not true; 1 = somewhat or sometimes true; 2 = very true or often true). Scores derived from the problem items of the YSR include a Total Problems score, subscale scores for Internalizing and Externalizing problems and problem syndrome scale scores. The YSR provides separate profiles for boys and girls. The problem syndrome scales include Withdrawn (7 items), Somatic Complaints (9 items), Anxious/Depressed (16 items) Delinquent Behavior (11 items), Aggressive Behavior (19 items), Social Problems (8 items), Thought Problems (7 items), Attention Problems (9 items) and Other Problems (20 items). Items from the scales for Withdrawn, Somatic Complaints and Anxious/Depressed make up the Internalizing subscale (31 items), with scores ranging from 0 to 62. One item appearing on two of the syndrome scales is counted only once in the Internalizing score. Items from the syndrome scales for Delinquent Behavior and Aggressive Behavior make up the Externalizing subscale (30 items), with scores ranging from 0 to 60. The Total Problems score is derived from ratings on 101 problem items with scores ranging from 0 to 202. Tables are provided in order to convert raw scores for the Internalizing, Externalizing, and Total Problems scales to T scores, with a mean of 50 and a standard deviation of 10. Higher scores indicate a greater number of self-reported problem behaviors. In the present study, internal consistency for the scales

was satisfactory; Internalizing problems (Cronbach's alpha = .84), Externalizing problems (Cronbach's alpha = .90), and Total Problems (Cronbach's alpha = .95).²

Teacher-reported problem behaviors. The Teacher's Report Form (TRF; Achenbach, 1991a) is a measure designed to obtain teachers' ratings of students on items concerning school performance, adaptive functioning, and problem behaviors. For the purposes of the present investigation, only the problem behavior portion of the TRF was included in this study. The problem behavior portion of the TRF profile consists of 113 items that are rated on a 3-point scale (0 = not true as far as you know; 1 = somewhat or sometimes true; 2 = very true or often true). Scores derived from the problem behavior portion of the TRF include a Total Problems score, subscale scores for Internalizing and Externalizing problems, and problem syndrome scale scores. The TRF provides separate profiles for boys and girls and for the age ranges of 5 to 11 and 12 to 18.³ The problem syndrome scales for adolescent boys include Withdrawn (9 items), Somatic Complaints (9 items), Anxious/Depressed (18 items), Delinquent Behavior (9 items), Aggressive Behavior (25 items), Social Problems (13 items), Thought Problems (8 items), Attention Problems (20 items) and Other Problems (19 items). Items from the scales for Withdrawn, Somatic Complaints and Anxious/Depressed make up the Internalizing subscale (35 items), with scores

² Reliabilities were also calculated for each measure, separately by group, and found to be comparable to those for the total group. Thus, for parsimony, only total group alpha coefficients are reported.

³ Two participants with behavioral disorders were above this age range, but as reported in the manual, a deviation beyond the upper age limit is appropriate if the adolescent is attending school (Achenbach, 1991a).

ranging from 0 to 70. The one item appearing on two of the syndrome scales is counted only once in the Internalizing score. Items from the syndrome scales for Delinquent Behavior and Aggressive Behavior make up the Externalizing subscale (34 items), with scores ranging from 0 to 68. The Total Problems score is derived from ratings on 120 problem behavior items. Scores can range from 0 to 240. Tables are provided in order to convert raw scores for the Internalizing, Externalizing, and Total Problems scales to T scores, with a mean of 50 and a standard deviation of 10. Higher scores indicate a greater number of teacher-rated problem behaviors. In the present study internal consistency for the scales was high; Internalizing problems (Cronbach's alpha = .88), Externalizing problems (Cronbach's alpha = .98), and Total Problems (Cronbach's alpha = .98).

Epistemic Reasoning

The Epistemic Doubt Interview. The Epistemic Doubt Interview (EDI; Boyes, 1987) targets examination of the belief entitlements of individuals with respect to matters of epistemic uncertainty. Specifically, the focus of this measure is to discern the process used in the construction and resolution of competing knowledge claims. This interview strategy includes the presentation of two stories, each involving differing knowledge claims put forth from competing groups about a singular issue (for example, see Table 1). The first story describes opposing sides (i.e., parents' committee, students' committee) on the matter of whether a high school should offer a driver training program. The competing knowledge claims presented by the two groups refer to previously presented scientific information. The second story concerns opposing views regarding the matter of native/non-native relations. The presentation

of each story is followed by a standard series of probes specific to the issue involved. Additional probes concerning more general matters of epistemic certainty follow presentation of the two stories in an effort to examine an adolescent's generalized conceptualizations and resolutions of these and similar conflicts.

As noted by Chandler et al. (1990), one concern regarding the use of hypothetical stories designed to gain insight about an individual's level of epistemic reasoning is "that the usual difficulties many young subjects experience with these procedures might be an artifact of their unfamiliar content and lack of personal relevance" (p. 383). More specifically, Boyes and Chandler (1992) suggest that "the form of the Epistemic Doubt Interview should be retained in future studies but that the issues addressed within it ought to be changed where necessary so that they remain topical for the subjects being questioned" (p. 299). Thus, because one of the two stories comprising the original EDI was developed in 1987 and was designed to reflect a "locally controversial matter concerning native/non-native relations" (Chandler et al., 1990, p.383),⁴ it was replaced with a story reflecting a more current and regional topic that was considered relevant to the participants in the present study. The new story was written so as to portray two committees as advancing conflicting positions about the issue of the speed limit on Washington State freeways outside of city limits. The story was pilot tested with a small sample of adolescents in order to ensure that it could be scored similarly to the original remaining story. Additionally, a minor change was made to the first story (i.e., Driving Age). Specifically, Washington State was

⁴ The original story was developed for use with adolescents living in Vancouver, British Columbia, Canada, and at a time when Native issues were salient.

used in place of British Columbia. The new story and accompanying interview questions used in the present investigation are included in Table 1 (see Appendix G for a complete version of the EDI utilized in the present study).

The EDI yields a description of a participant's stance regarding the construction and resolution of matters concerning conflicting knowledge claims. The epistemic stance of the participant's response can be indicated as that of naive realism (e.g., conflict is attributed to differential access to facts, and can be resolved through direct access to the facts), defended realism (e.g., although most conflict can be resolved through access to facts, any unresolved conflicts are case-specific and can be attributed to differences of opinion), dogmatism/skepticism (e.g., conflict is attributed to the subjectivity of all knowledge and resolution is sought through noncognitive methods), or postskeptical rationalism (e.g., although absolute certainty is unobtainable, conflict can be resolved through consideration of alternatives). More detailed descriptions of these stances are provided in the review of the literature section.

Table 1

The Epistemic Doubt Interview

Speed Limit

Recently, in Washington State a decision was made to raise the freeway speed limit outside of city limits from 55 miles per hour to 70 miles per hour. Many people wanted the speed limit to remain at 55 m.p.h. and many other people wanted the speed limit raised to 70 m.p.h. A committee of citizens in favor of raising the speed limit to 70 miles per hour and a committee of citizens in favor of maintaining a 55 mile per hour speed limit both wrote articles which appeared in the local paper. Parts of these articles are shown below.

Report By The Committee for the 55 Mile Per Hour Speed Limit:

We are opposed to the raising of the freeway speed limit from 55 to 70 miles per hour. Scientific information presented in this newspaper over the past few months clearly shows that the 70 m.p.h. speed limit is dangerous. While the law now allows individuals to drive at 70 m.p.h. in some areas outside of cities, this increase in the speed limit has placed drivers at much greater risk for accidents and fatalities. The speed limit must be kept at 55 m.p.h. in order to protect all drivers throughout the state.

Report By The Committee for the 70 Mile Per Hour Speed Limit:

We are in favor of having a 70 m.p.h. speed limit on Washington State freeways. Scientific information that has been printed in this newspaper over the past few months clearly shows that a 70 m.p.h. speed limit is safe and does not increase the possibility of accidents. The law currently allows individuals to drive at 70 m.p.h. in some areas of Washington State and the safety of drivers has been maintained. The 70 m.p.h. freeway speed limit should be kept on the freeways of Washington State.

Probe Questions

1. On the basis of what you have read, tell me what these two committees had to say about the speed limit on Washington State freeways?
2. Are the arguments and conclusions in these two articles different in any important ways? How are they different?
3. Why do you think the authors of these two articles reached such different conclusions?

4. On the basis of what you have read, do think that one of these groups is mistaken or has gotten the facts wrong? How important are such mistakes in accounting for the different conclusions of these articles? (Would that be important?)
5. If these two committees had all of the same information, might they still disagree?
6. It sounds as though you are saying that people can view things in any way they want, is that what you mean?
7. What if another committee looked at these same facts and wrote an article which stated that the speed limit should be raised to 80 m.p.h. or lowered to 45 mph. Would that be an okay opinion to have? Why or why not?
8. What if an expert from the State Patrol read both of these articles, would he or she be able to tell what the speed limit should be in Washington State? What makes you say that?
9. Is there a way of deciding which of these articles government officials ought to pay most attention to in deciding what the speed limit should be in Washington State? Explain further or why not?
10. What other kinds of things might government officials consider in order to get a clear picture of what the speed limit should be in Washington State?

General Probe Questions

1. What is it about these situations that makes finding out or deciding what is best or right so hard?
2. Is that true just for these situations or is it generally true? That is, are these just weird situations or are there a lot of situations like these in life and the world?
3. How should we approach these sorts of situations, what should we do?
4. How should we decide what to believe and what to do?
5. We could just decide to go our own ways when we disagree but as in these situations we often cannot do that. What then shall we do?
6. How do we decide what to think in these sorts of situations?

Scoring of the Epistemic Doubt Interview (EDI). Following procedures similar to those outlined by Boyes and Chandler (1992), each participant's transcribed interview responses were examined and coded for epistemic orientation. This coding process yielded two scores for the EDI; one categorical score for predominant level of epistemic functioning and one continuous score reflecting a combination of major and minor scores. In the present study, slight modifications to Boyes' and Chandler's scoring procedure were made and these are noted throughout this scoring description.

Initially, interviews were coded as reflecting an overall level of epistemic orientation (i.e., Level 0 - Naive Realism; Level 1 - Defended Realism; Level 2 - Dogmatism/Skepticism; Level 3 - Postskeptical Rationalism). It should be noted that in the present investigation, no hierarchical distinction was made in coding between the dogmatic and skeptical stance. This decision was made because in previous research both stances have been described as reflective of a single epistemic orientation (Boyes & Chandler, 1992). Instead, as outlined by Boyes (1987; Chandler et al., 1990), both the dogmatic and skeptical orientations were coded using the posture of generic epistemic doubt entitled dogmatism/skepticism. In addition, Boyes and Chandler (1992) separately coded responses to the two stories and the general probes, and then used "the 'highest' epistemic level clearly evident in their responses" (p. 289) in order to assign a categorical score. In the present study, however, the categorical score was based on the predominant epistemic stance reflected throughout the participant's responses to both stories and the general probes. This decision was made in order to ensure that the categorical score truly reflected the overall general stance put forth in the response rather than assigning credit for an

epistemic stance that was not clearly evident. Specifically, “predominant” in this case was operationalized as the epistemic orientation reflected in 50% or more of the participant’s responses. When a participant’s responses reflected an equal division between two levels, as in the process described by Boyes and Chandler, the higher epistemic orientation reflected in the response was assigned as the categorical score.

Due to the possibility that participants’ responses could reflect more than one level of epistemic orientation, major and minor stage scores were then assigned. The procedures for assignment of the major and minor stage scores mirrored those used by Boyes and Chandler (1992), with the exception that, as previously noted, no hierarchical distinction was made between dogmatic and skeptical orientations. Accordingly, the orientation reflected in greater than 50% of the participant’s responses was assigned as the major stage score. Any stance reflected in less than 50% of the responses was assigned as the minor stage score. When the participant’s responses reflected an even split between two epistemic orientations, the higher of the two stances was assigned as the major stage score. Using this scoring designation, when a participant had the same major and minor score throughout his response, he was assigned a ‘pure’ or single digit score (e.g., 0, 1, 2, 3). This process led to a total of 10 possible scoring designations that ranged from pure naive realist to pure postskeptical rationalist (i. e., 0, 0(1), 1(0), 1, 1(2), 2(1), 2, 2(3), 3(2), 3). These scores were then coded on a scale of 1 to 10. This procedure has been employed in previous studies whereby researchers have utilized an EDI continuous scale score for some data analytic procedures (e.g., correlations) (Boyes, 1987; Boyes & Chandler, 1992; Chandler et al., 1990). Previous research indicates adequate inter-rater

reliabilities with this measure (i.e., percentage agreement between raters ranging from 79% to 90%) (e.g., Boyes, 1987; Boyes & Chandler, 1992; Chandler et al., 1990).

In order to establish inter-rater reliability in the present study for the EDI, a second rater was trained in the coding process. Ten percent of the interviews were randomly selected for training. Initially, this training procedure required the author to provide the second rater with information regarding the construct of epistemic reasoning (e.g., previous research articles) and a detailed explanation regarding the basis for assigning scores for general level of epistemic functioning and major and minor stage scores. The author modeled the process of coding for 5% of the interviews. Following this, the second rater independently coded 5% of the interviews. Initial levels of agreement between the author and second rater were 100 % for categorical scoring, and 83 % for assignment of major and minor stage scores. For the purposes of determining inter-rater reliability for this scoring process, 13 (20%) of the interviews were randomly selected. Raters were blind to the participant group membership of each interview. This process yielded inter-rater reliabilities of 100% for the categorical, or general, level of epistemic functioning, and 85% for the determination of the continuous scores based on assignment of major and minor scores. These reliabilities are consistent with inter-rater reliabilities reported in previous research (i.e., Boyes, 1987; Boyes & Chandler, 1992; Chandler et al., 1990).

Adolescent Egocentrism

Adolescents' level of egocentrism was assessed on two dimensions: imaginary audience and personal fable.

Imaginary audience. The New Imaginary Audience Scale (NIAS; Lapsley et al., 1989; see Appendix H) is a Likert-type self-report measure that assesses the extent to which adolescents “engage in object relational ideation, interpersonal fantasies, and ‘visions of the self’” (Lapsley et al., 1989, p. 491). Participants are asked to rate 38 items in response to the stem “How often do you daydream about, or imagine yourself to be in the following situations?” on a scale of 1 (never) to 4 (often). Sample items for the NIAS include “Being admired for the way you look,” “Imagining how others would feel if you were gone,” and “Being admired because of the car you have, or want to have.” For the purposes of the present investigation, the NIAS was slightly modified. Specifically, minor changes in wording were made to five of the items on the NIAS in order to update the wording of the item (e.g., “CD’s and tapes” instead of “records”), clarify terminology (e.g., “Being an important or strong leader,” instead of “Being a strong leader”), or to make the item applicable to participants who had no experience with dating (e.g., “Having a popular friend,” instead of “Having a popular boyfriend or girlfriend”).

Scores on the NIAS can range from 38 to 152, with higher scores indicating a greater tendency to construct imaginary audiences. Previous research utilizing the NIAS reports adequate reliability (Cronbach’s alpha = .92, Lapsley et al., 1989). With regard to the present study, internal consistency, as measured by Cronbach’s alpha, was found to be satisfactory for the NIAS (.93).

Personal fable. The New Personal Fable Scale (NPFS; Lapsley et al., 1989; see Appendix I) is a Likert-type self-report measure that assesses an adolescent’s feelings of personal uniqueness, omnipotence, and invulnerability. Participants are

asked to rate 46 items that make up the subscales for Invulnerability (14 items), Omnipotence (19 items), and Personal Uniqueness (13 items) in response to the stem "How you feel about each statement" on a scale of 1 (strongly disagree) to 5 (strongly agree). The Invulnerability subscale includes items such as "I can get away with things that other people can't" and "It is easy for me to take risks because I never get hurt". Scores on this subscale can range from 14 to 70, with higher scores indicating a greater sense of invulnerability, or invincibility to harm. The adolescent's "sense of power and unlimited influence" (Schonert-Reichl, 1994a, p. 55), or sense of omnipotence, is measured with the Omnipotence subscale (e.g., "Everyone knows that I'm a leader," "I don't think anything will stand in the way of my goals"). Scores on this subscale can range from 19 to 95, with higher scores indicating a greater sense of omnipotence. The degree to which an adolescent views himself as unique is assessed on the Personal Uniqueness subscale with items such as the following: "No one has the same thoughts and feelings I have" and "I am somehow different from everyone else". Scores on this subscale can range from 13 to 65, with higher scores indicating a greater sense of personal uniqueness.

Pilot testing of the NPFS revealed that adolescents with problem behaviors had difficulty accurately comprehending questions that were negatively worded. Thus, in the present study, an example of a positively and negatively worded item (i.e., "I like pizza," "I don't like pizza") was included in the directions for clarity.

Lapsley et al. (1996) report adequate reliabilities (via Cronbach's alpha) for each of the three subscales of the NPFS (i.e., Personal Uniqueness = .70; Omnipotence = .79; Invulnerability = .73). In the present study, internal consistency,

as measured by Cronbach's alpha, was found to be adequate for the Invulnerability (.63), Omnipotence (.74), and Personal Uniqueness (.66) subscales.

Personal-Intimacy and Group-Integration

Personal-intimacy and group-integration with peers and family were assessed using the Relational Provision Loneliness Questionnaire (RPLQ; Hayden, 1989; see Appendix J). This self-report measure consists of 28 items that ask participants to indicate the level of personal-intimacy and group-integration that they perceive is provided to them in their relationships with both peers and family. Respondents utilize a 5-point scale to indicate the degree to which they feel that each statement is true about their relationships (i.e., always true, true most of the time, sometimes true, hardly ever true, not at all true). The RPLQ yields four subscale scores for personal-intimacy and group-integration with regard to peers and family (i.e., Peer Personal-Intimacy, Peer Group-Integration, Family Personal-Intimacy, Family Group-Integration). Subscales are comprised of 7 items, with scores ranging from 7 to 35 for each subscale. An example of an item from the Peer Personal-Intimacy subscale is "I have a friend who is really interested in hearing about my private thoughts and feelings." An example of an item from the Peer Group-Integration subscale is "I feel a part of a group of friends that do things together." The items presented in the peer subscales are repeated with reference to the participant's family for Family Personal-Intimacy (e.g., "I have someone in my family who is really interested in hearing about my private thoughts and feelings") and Family Group-Integration (e.g., "In my family, I feel a part of a group of people that do things together"). Higher scores indicate higher levels of perceived personal-intimacy or group-integration provided by

relationships with peers or family. In the present study, internal consistency, as measured by Cronbach's alpha was adequate: Peer Personal-Intimacy (.90), Peer Group-Integration (.86), Family Personal-Intimacy (.92) and Family Group-Integration (.95). These findings are comparable to previous reliability coefficients provided by the author of the RPLQ for Peer Personal-Intimacy (alpha = .89), Peer Group-Integration (alpha = .87), Family Personal-Intimacy (alpha = .93) and Family Group-Integration (alpha = .92) (Hayden, 1989).

Procedures

Procedures Utilized With Adolescents

Each participant was seen individually in a quiet room in his school. Measures were completed in single sessions lasting from 60 to 80 minutes for those participants with behavioral disorders and 45 to 60 minutes for those adolescent boys without behavioral disorders. The discrepancy in administration time for the two groups was due to the fact that the adolescent boys with behavioral disorders completed one additional measure (i.e., YSR) than adolescent boys without behavioral disorders.

Initially, each student gave informed consent to participate in the study by signing a student consent form (Appendix E). The order of administration of self-report measures (i.e. NIAS, NPFS, RPLQ) versus the structured interview (i.e., EDI) was counterbalanced to control for order effects. Additional counterbalancing was utilized within the administration of the self-report measures of the NIAS, NPFS, and RPLQ. Administration of the demographic measure preceded that of the self-report measures. Because only those participants with behavioral disorders responded to the YSR, it was administered at the end of the other self-report measures.

In the administration of the self-report measures, each participant was provided a protocol on which to respond while either the author or a trained graduate level assistant read aloud each of the items. As previously noted, pilot testing with the NPFS indicated the potential for participants to have difficulty with negatively worded items. Thus, the presentation of an example of a positively and negatively worded item (i.e., "I like pizza," "I don't like pizza"), utilizing the Likert-type response format of the NPFS, preceded the administration of the NPFS in order to assist participants with the questioning format.

Administration of the EDI was conducted by the author. A copy of the stories from the EDI was given to each participant. Each story from the EDI was read out loud while participants silently followed along. Following this, responses were elicited using the standard set of probe questions. Additional probing was also carried out in order to further obtain information necessary to score each interview. All responses to the interview were audio-taped for later transcription and scoring.

The administration of the PPVT-R followed either the administration of the self-report measures or the interview on an alternating basis.

Procedures Utilized With Teachers

In order to gather information with respect to levels of problem behavior of the 63 adolescent participants, teacher assistance was sought. Twenty-nine teachers (i.e., 7 special education teachers, 22 general education teachers) completed the problem behavior portion of TRF. Past research utilizing the TRF has determined that special educators and general educators are similar in their ratings of students' behaviors (Ritter, 1989).

Results

Results of this research are reported in six sections. The first section includes a description of results from preliminary analyses that examine the validity of group distinctions. In the second section, analyses that examine hypotheses concerning differences in social cognition (i.e., epistemic reasoning, imaginary audience, personal fable) and social relationships (i.e., peer personal-intimacy, peer group-integration, family personal-intimacy, family group-integration) between adolescent boys with and without behavioral disorders are described. The third section includes a description of results from a discriminant function analysis designed to predict group membership and classify adolescent boys with and without behavioral disorders on the social cognitive and social relational variables examined in this study. In the fourth section, results regarding the interrelations among social cognitive variables are presented. Next, analyses conducted to examine the relations of social cognition to social relationships are delineated. Finally, the relations between social cognition and types of problem behaviors are described.

Where appropriate, effect sizes are reported in addition to probability values in order to provide a more comprehensive portrayal of between group differences than provided in previous studies. Effect sizes represent the strength of the association, or magnitude of the effect, and provide researchers with an index on which to make claims regarding a study's practical significance. Practical significance "is usually assessed by computing the percentage of variance in the DV that is associated with the IV" (Tabachnick & Fidell, 1989, p. 344) and is reported here as the squared eta coefficient. In determining practical significance, Cohen's (1969) generic

interpretation of effect sizes in which .20, .50, and .80 are considered as cut points for small, medium, and large effects, respectively, was utilized in the present study.

Preliminary Analyses

A primary purpose of this study was to examine the relation between psychopathology and social cognition by determining differences between two groups of adolescent boys who were different in terms of level of psychopathology. In the present study, level of psychopathology was operationalized in terms of the presence or absence of a label of "behavioral disorders." Thus, adolescent boys were categorized into one of two groups--adolescent boys with behavioral disorders and adolescent boys without behavioral disorders. As mentioned in the method section, the sample from which the boys with behavioral disorders was drawn consisted of special education classrooms serving students who had been identified as having "behavioral disorders" by school personnel. That is, in the present study, the adolescent boys with behavioral disorders had already been identified as having behavioral disorders by a district multidisciplinary assessment team who categorized the adolescents based on criteria outlined by Washington State (1995).⁵ One concern regarding the validity of this classification approach is that the categorization of students is not necessarily standardized across assessments and therefore may be variable across respondents and contexts (e.g., varying levels of tolerance for behaviors across classrooms and schools).

⁵ See page 57 for a full description of the criteria for the definition of a behavioral disorder.

Another related issue in the present study concerned the accuracy of the procedure used for selecting adolescents who did not have behavioral disorders. These adolescent boys were drawn from the “general” school population on the basis of their race and birth dates in order to closely approximate the group of adolescent boys with behavioral disorders on these variables. In order to clearly distinguish individuals in the “comparison group” from the individuals in the behavioral disorders group, administration personnel and school counselors provided confirmation that each potential participant in the group of adolescents without behavioral disorders had not received excessive amounts of behavioral referrals during the past school year. Nevertheless, one caveat with this procedure is the possibility of adolescents with significant problem behaviors going undetected by traditional school policies and procedures. Thus, in order to provide some validity for the present study’s distinction between adolescents with behavioral disorders and adolescents without behavioral disorders, two reliable and valid measures of adolescent problem behaviors--the Teacher’s Report Form (TRF; Achenbach, 1991a) and the Youth Self-Report Form (YSR; Achenbach, 1991b)--were utilized in order to examine the validity of group distinctions. Findings from these analyses are detailed below.

Teacher-Rated Problem Behaviors

In accordance with guidelines put forth in the manual, raw scores from the problem behavior scales of the TRF (Achenbach, 1991a) were initially transformed into T score equivalents based on percentiles obtained from normative samples provided in the TRF manual. As reported by Achenbach, “The main function of the T scores is to facilitate comparisons of the degree of deviance indicated by children’s

standing on different scales and different instruments" (p. 166). The T score, with a mean of 50 and a standard deviation of 10, allows for comparisons of scores between the two groups of adolescent boys in this study and between the scores of these boys and the scores of boys, ages 12 to 18, in the norming sample described in the test manual (Achenbach, 1991a). It should be noted that the cut-point for distinguishing between adolescents in nonclinical (i.e., nonreferred) and clinical samples (i.e., adolescents referred for mental health or special education services related to problem behavior) is a T score of 60 for the Internalizing, Externalizing, and Total Problems scales.

The means and standard deviations of the problem behavior scales from the TRF (Achenbach, 1991a) for adolescent boys with behavioral disorders and adolescent boys without behavioral disorders are presented in Table 2. First, it should be noted that the mean T score of the boys with behavioral disorders approached 60 for the Internalizing subscale of the TRF and exceeded 60 for both the Externalizing and Total Problems subscales, thereby indicating that the boys with behavioral disorders in the present study obtained scores comparable to those obtained by adolescents from clinical samples as referenced in the TRF test manual (Achenbach, 1991a). In contrast, the mean T score for boys without behavioral disorders was lower than the mean T score of adolescents in a nonclinical national norm referenced sample (i.e., $T = 50$) for all scales of the TRF.

To determine the association between group status (i.e., boys with behavioral disorders, boys without behavioral disorders) and psychopathology, a series of independent samples t-tests were conducted in which the Internalizing, Externalizing,

and Total Problems behavior scales of the TRF served as the independent variable and group status (i.e., boys with behavioral disorders, boys without behavioral disorders) was the dependent variable. As can be seen in Table 2, adolescent boys with behavioral disorders were rated significantly higher than adolescent boys without behavioral disorders by teachers on problem behaviors for Internalizing, $t(58) = 8.70$, $p < .001$, Externalizing, $t(61) = 6.34$, $p < .001$, and Total Problems, $t(61) = 7.65$, $p < .001$. In terms of the effect sizes calculated for Internalizing, Externalizing, and Total Problems, the strength of the association between problem behaviors and group status was substantial ($\eta^2 = .55$, $\eta^2 = .40$, and $\eta^2 = .49$, respectively). Taken together, these analyses provide support for the contention that the behavioral disorder and the non-behavioral disorder samples represent distinct populations with regard to level of problem behaviors.

Table 2

Means, Standard Deviations, and Ranges of Teacher-Rated Problem Behaviors for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

TRF Scale	Boys with behavioral disorders			Boys without behavioral disorders		
	<u>M</u>	<u>SD</u>	Range	<u>M</u>	<u>SD</u>	Range
Internalizing	59.23 _a	5.78	51 - 70	44.59 _b	7.49	38 - 58
Externalizing	65.68 _a	11.59	40 - 86	48.72 _b	9.57	40 - 70
Total Problems	63.68 _a	8.50	48 - 76	46.63 _b	9.16	33 - 66

Note. Means in the same row with different subscripts differ significantly at $p < .001$; $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

Self-Reported Problem Behaviors

The purpose of examining self-reported problem behaviors, assessed via the YSR (Achenbach, 1991b), was to explore relations between self-assessments of problem behaviors and social cognition within the group of adolescent boys with behavioral disorders. Additionally, although YSR data were not collected for adolescent boys without behavioral disorders, the self-reported problem behaviors of the boys with behavioral disorders also provides some further support for the contention that these adolescents possess significant problem behaviors. Thus, the T scores obtained from the YSR allow for the comparison of scores between Internalizing, Externalizing, and Total Problems scales, as well as comparison with T

scores from these same scales on the TRF and YSR national norms. Pearson product-moment correlations were calculated to determine the relation between the three scales of the TRF and the corresponding scales on the YSR for adolescents with behavioral disorders. Significant correlations between teacher-ratings and self-reports were observed for both Externalizing ($r = .69, p < .001$) and Total Problems scales ($r = .54, p < .01$). Perhaps not surprisingly, given the nature of internalizing problem behaviors, the correlation between teacher-reported and self-reported internalizing problem behaviors was not statistically significant ($r = .26, p = ns$).

The means and standard deviations for the problem behavior scales of the YSR for the adolescent boys with behavioral disorders are as follows: Internalizing ($M = 56.87, SD = 10.47$); Externalizing ($M = 58.13, SD = 12.69$); and Total Problems ($M = 59.03, SD = 11.90$). Figure 1 provides a graphic portrayal of the relative ratings of problem behaviors of boys with behavioral disorders and boys without behavioral disorders on the Internalizing, Externalizing, and Total Problems scales of the TRF (and the YSR for the sample of adolescents with behavioral disorders), by use of a common T score format in which the mean is 50 and the standard deviation is 10. As with the TRF, the established cut-point for distinguishing clinical samples on the YSR is $T = 60$ for each scale (i.e., Internalizing, Externalizing, Total Problems). As can be seen in Figure 1, adolescent boys with behavioral disorders and their teachers are in agreement that these youth display a greater amount of internalizing, externalizing, and total problems than do adolescent boys without behavioral disorders. Additionally, when compared to the standardized norms for each measure, mean T scores for boys with behavioral disorders approach or are above the clinical cut-point,

whereas scores for boys without behavioral disorders are below the national mean for each scale.

In summary, behavioral ratings obtained in the present study suggest that adolescent boys with behavioral disorders are significantly different from adolescent boys without behavioral disorders across problem behavior types as measured by the Internalizing, Externalizing, and Total Problems scales of the TRF and YSR. When teacher reports are considered, boys with behavioral disorders are higher than boys without behavioral disorders on each of the indices of problem behaviors. Similarly, when self-reports are considered, self-ratings from adolescent boys with behavioral disorders approximate those of adolescents in clinical samples (Achenbach, 1991b). Moreover, levels of problem behaviors of adolescent boys with behavioral disorders, whether rated by teachers or self, approach or are in a clinical range, while the levels of problem behaviors for adolescent boys without behavioral disorders do not. In sum, preliminary analyses appear to support the notion that the two samples represent distinct populations.

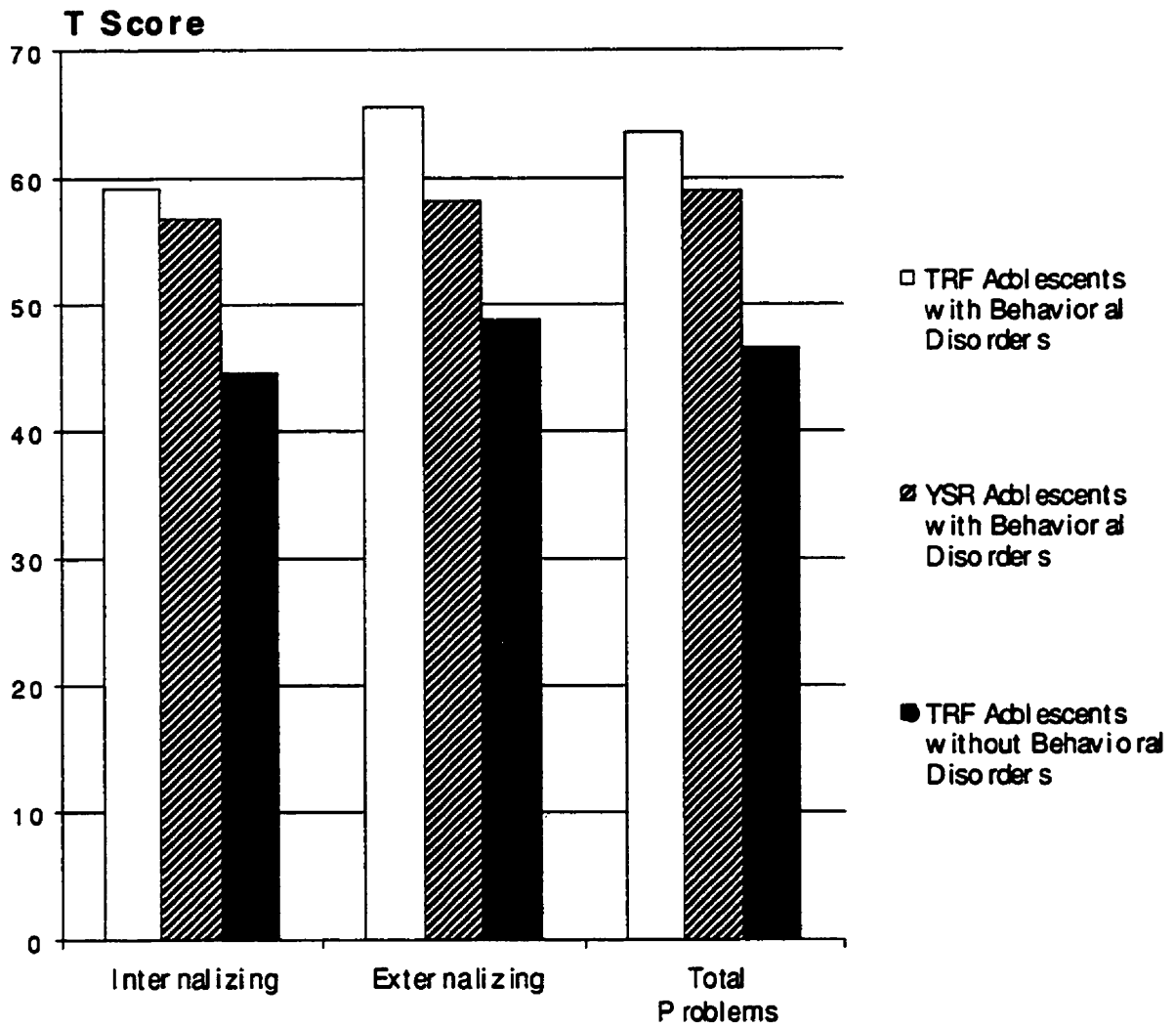


Figure 1. Mean T scores for Internalizing, Externalizing, and Total Problems scales of the TRF and YSR for adolescent boys with behavioral disorders ($n = 31$) and the TRF for adolescent boys without behavioral disorders ($n = 32$).

Group Differences in Social Cognitive Reasoning and Social Relationships

In the present investigation, hypotheses were put forth suggesting that differences exist between adolescent boys with behavioral disorders and adolescent boys without behavioral disorders on epistemic reasoning, adolescent egocentrism, and personal-intimacy and group-integration with peers and family. In the following section, results of analyses conducted examining group differences on the social cognitive variables of epistemic reasoning, adolescent egocentrism (i.e., imaginary audience, invulnerability, omnipotence, personal uniqueness), and perceptions of personal-intimacy and group-integration with regard to social relationships with peers and family are presented.⁶ This section begins with a description of preliminary analyses examining the suitability of receptive vocabulary as a covariate in analyses examining between group differences.

As presented in the method section, adolescent boys with behavioral disorders scored significantly lower on receptive vocabulary in comparison to adolescent boys without behavioral disorders. Researchers examining differences between

⁶ Although age differences were also of interest in the present investigation, the small sample size precluded the inclusion of age as a second between-groups factor in the analyses (cell sizes for each age group ranged from 13 to 18). Nevertheless, exploratory analyses involving each dependent variable were conducted with group status (adolescent boys with behavioral disorders, adolescent boys without behavioral disorders) and age (early adolescents, 12 - 14; middle adolescents, 15 - 19) as independent factors. All main effects for age were nonsignificant. Similarly, none of the interactions between group and age reached statistical significance. Further analyses were also conducted examining correlations between age and each of the social cognitive variables, separately for each group. None of these correlations reached statistical significance.

maladjusted and adjusted populations in social cognition have noted the importance of controlling for factors thought to be important correlates of social cognitive functioning (e.g., Chandler, 1973; Chandler & Moran, 1990; Lee & Prentice, 1988; Lenhart & Rabiner, 1995; McColgan et al., 1983). Because verbal ability (as mentioned in the method section, receptive vocabulary was used as a measure of verbal ability in the present investigation) may serve a mediating role in social cognitive functioning (e.g., Gregg et al., 1994; Lee & Prentice, 1988; Lenhart & Rabiner, 1995), group differences in receptive vocabulary were examined. Therefore, as a result of the significant differences in receptive vocabulary, it was important to include receptive vocabulary as a covariate in subsequent analyses examining group difference in order to rule out the possibility that group differences on the social cognitive variables were due solely to differences in verbal ability. Thus, preliminary analyses were conducted to examine the statistical viability of using receptive vocabulary as a covariate in subsequent analyses. In order to determine the appropriateness of receptive vocabulary, as measured by the PPVT-R, as a covariate, it was first necessary to determine whether or not the homogeneity of regression assumption held for each of the social cognitive variables in relation to receptive vocabulary. This assumption is met when the relationship between the dependent variable and the covariate is similar between groups. The assumption is violated (i.e., there is heterogeneity of regression) when there is an interaction between the independent variable and the covariate. An interaction suggests that the covariate is interacting with the dependent variable differently for each group and that the necessary covariate adjustment would differ by group, thus rendering the covariate inappropriate for use with the dependent variable

(Tabachnick & Fidell, 1989). In the present investigation, this assumption would be considered to be violated if the relationship between receptive vocabulary and the dependent variable differed by group status.

In order to test for the assumption of homogeneity of regression coefficients, a series of regression analyses were conducted in which each of the social cognitive variables served as separate dependent variables. For each regression, the PPVT-R and group status (i.e., adolescent boys with behavioral disorders and adolescent boys without behavioral disorders coded as 1 or 2) were entered as predictors in the first step of the equation. The interaction term (i.e., PPVT-R x group) was entered in the second step of the equation. The variance accounted for by the interaction term indicates whether or not the interaction between the covariate and independent variable is significant. A significant F value indicates that the effect of the covariate is different for each group. The homogeneity of regression assumption is considered to be supported if the change in R^2 is not statistically significant for the interaction.

Analyses yielded support for the assumption of homogeneity of regression coefficient for all social cognitive variables, with the exception of imaginary audience, R^2 change = .063, $F(1,59) = 4.68$, $p < .05$. In order to determine the nature of the relationship between group status and receptive vocabulary with respect to imaginary audience, further analyses were conducted. Pearson product-moment correlations indicated that, whereas the relationship between receptive vocabulary and imaginary audience was significant among adolescent boys with behavioral disorders, $r = -.54$, $p < .01$, no significant relationship between these variables was found for adolescent boys without behavioral disorders, $r = -.28$, $p = ns$.

Thus, although receptive vocabulary (as measured by the PPVT-R) was considered an inappropriate covariate for analyses involving imaginary audience, regression results suggest the tenability of this covariate in subsequent analyses with regard to the remaining social cognitive variables. However, in order to take a more rigorous approach with the statistical analyses of the present investigation, analyses relevant to each variable (except imaginary audience) are presented using receptive vocabulary as a covariate, in turn, below.

Group Differences in Epistemic Reasoning

In the first analysis group differences in epistemic reasoning were examined, with the expectation that adolescents with behavioral disorders would score lower than adolescents without behavioral disorders. To test this hypothesis, an analysis of covariance (ANCOVA) was conducted with the EDI continuous score serving as the dependent variable and group status (i.e., adolescent boys with behavioral disorders, adolescent boys without behavioral disorders) as the independent variable. As mentioned above, receptive vocabulary was used as a covariate.⁷ Results indicated significant group differences with adolescent boys with behavioral disorders scoring significantly lower in epistemic reasoning (adjusted $M = 5.56$; unadjusted $M = 5.29$; unadjusted $SD = 1.13$) than adolescent boys without behavioral disorders (adjusted $M = 6.76$; unadjusted $M = 7.03$; unadjusted $SD = 1.62$), $F(1,59) = 10.21$, $p < .01$. The strength of the association between epistemic reasoning and group status was small

⁷ Both this analysis and subsequent analyses concerning group differences in social cognition were conducted without the use of receptive vocabulary as a covariate and yielded results comparable to those found when receptive vocabulary was utilized as a covariate.

($\eta^2 = .15$), indicating that 15% of the variability in EDI scores was accounted for by group status.

In order to more specifically examine these group differences with respect to level of epistemic reasoning, a chi-square analysis was conducted with the categorical EDI scores serving as the dependent variable. The categorical EDI score allows for a closer examination of group differences on epistemic stance (i.e., defended realist, generic doubt, postskeptical rationalist). Results indicated a significant association between group status and participants' predominant categorical level on the EDI, $\chi^2(2, N = 63) = 11.25, p < .01$. As can be seen in Table 3, whereas six (19%) of the boys without behavioral disorders reasoned predominantly at the postskeptical rational level (more boys without behavioral disorders than would be expected on the basis of marginal frequencies), not one of the boys with behavioral disorders reasoned at this level. This pattern was reversed for the category of defended realists, with a higher than expected frequency of boys with behavioral disorders reasoning at this level, and a lower than expected frequency of boys without behavioral disorders reasoning at this level.

It will be recalled that a hypothesis was put forth regarding the particular orientation of epistemic reasoning (i.e., dogmatic, skeptical) to be utilized by adolescent boys with behavioral disorders who reasoned from a level of generic doubt. Specifically, the majority of boys with behavioral disorders who reasoned from a stance of generic doubt were expected to display a skeptical orientation in their responses to the EDI. Although no hypothesis was made concerning the particular orientation of generic doubt utilized by the adolescent boys without behavioral

disorders, differences between groups were explored. In order to examine group differences regarding the specific orientation of epistemic reasoning utilized by the participants who reasoned from a level of generic doubt, a chi-square analysis was conducted with the specific epistemic orientation of generic doubt (i.e., dogmatic, skeptical) as the dependent variable. Results indicated a significant association between group status and orientation of generic doubt on the EDI, $\chi^2 (1, N = 32) = 4.22, p < .05$. As can be seen in Table 4, of the 15 boys with behavioral disorders who reasoned from a position of generic doubt, 13 (87%) gave responses to the interview that reflected a skeptical approach to the reasoning process whereas only 2 (13%) responded in a dogmatic fashion. In contrast, of the 17 boys without behavioral disorders who reasoned from the stance of generic doubt, 9 (53%) responded in a skeptical manner whereas 8 (47%) gave responses reflecting a dogmatic orientation.

In summary, as expected, boys with behavioral disorders reasoned at significantly lower epistemic levels than boys without behavioral disorders. In addition, the groups differed with regard to the orientation of generic doubt reflected in their reasoning. More specifically, the majority of boys with behavioral disorders who reasoned from a stance of generic doubt gave responses reflecting a skeptical orientation. In comparison, of those boys without behavioral disorders who reasoned from a stance of generic doubt, an approximate split between dogmatic and skeptical orientations was observed.

Table 3

Observed Frequencies of Predominant Level of Epistemic Reasoning for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

EDI category	Boys with behavioral disorders	Boys without behavioral disorders	Total
Defended Realist	$n = 16$ (51.6%) EF = 10.8 SR = 1.6	$n = 6$ (18.75%) EF = 11.2 SR = -1.5	$n = 22$ (34.9%)
Generic Doubt	$n = 15$ (48.4%) EF = 17.2 SR = -0.5	$n = 20$ (62.5%) EF = 17.8 SR = 0.5	$n = 35$ (55.6%)
Postskeptical Rationalist	$n = 0$ (0%) EF = 3.0 SR = -1.7	$n = 6$ (18.75%) EF = 3.0 SR = 1.7	$n = 6$ (9.5%)
Total	$n = 31$ (100%)	$n = 32$ (100%)	$N = 63$

Note. EF = Expected Frequency; SR = Standardized Residual; Critical value ($p < .05$)

for standardized residuals is 1.96.

Table 4

Observed Frequencies of Generic Doubt for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Generic Doubt posture	Boys with behavioral disorders	Boys without behavioral disorders	Total
Dogmatic	$n = 2$ (13.3%) EF = 4.7 SR = -1.2	$n = 8$ (47.1%) EF = 5.3 SR = 1.2	$n = 10$ (31.3%)
Skeptical	$n = 13$ (86.7%) EF = 10.3 SR = .8	$n = 9$ (52.9%) EF = 11.7 SR = -.8	$n = 22$ (68.8%)
Total	$n = 15$ (100%)	$n = 17$ (100%)	$N = 32$

Note. EF = Expected Frequency; SR = Standardized Residual; Critical value ($p < .05$)

for standardized residuals is 1.96.

Group Differences in Adolescent Egocentrism

Imaginary audience. Means, standard deviations, and ranges for each group on imaginary audience are presented in Table 5. Hypothesized group differences in imaginary audience were not supported. Specifically, results from an independent samples t test indicated that the adolescent boys with behavioral disorders were not significantly different from adolescent boys without behavioral disorders on imaginary audience, $t(61) = .27, p = ns$. As well, the strength of the association between group status and scores on the NIAS was extremely low ($\eta^2 = .00$). It should be noted that, because receptive vocabulary could not be used as a covariate in this analysis, these findings should be interpreted cautiously.

Table 5

Means, Standard Deviations, and Ranges of Imaginary Audience for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Group	Mean	SD	Range
Boys with behavioral disorders	102.61	23.48	54 - 142
Boys without behavioral disorders	101.16	18.54	61 - 146

Note. $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

Personal fable. The adjusted and unadjusted group means and standard deviations for the dimensions of the personal fable are displayed in Table 6. The range of scores for adolescent boys with behavioral disorders and adolescent boys

without behavioral disorders, respectively, for the three dimensions of the NPFS were as follows: Invulnerability (28 - 61; 29 - 62), Omnipotence (46 - 84; 38 - 82), and Personal Uniqueness (25 - 63; 33 - 60). A multivariate analysis of covariance (MANCOVA) was conducted to examine group differences on the three subscales (i.e., Invulnerability, Omnipotence, Personal Uniqueness) of the New Personal Fable Scale (NPFS). The independent variable was group status (i.e., adolescent boys with behavioral disorders, adolescent boys without behavioral disorders) and receptive vocabulary was used as a covariate. Using Wilk's criterion, the main effect for group was not significant, $F(3,58) = .27, ns$. Thus, results from this statistical analysis did not support the hypothesis that adolescent boys with behavioral disorders would have higher levels of personal fable ideation than adolescent boys without behavioral disorders. In addition, the multivariate effect size was small, $\eta^2 = .01$, indicating that distinction by group membership accounted for 1% of the NPFS score variance.

Table 6

Adjusted Means, Unadjusted Means, and Standard Deviations of Personal Fable Dimensions for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Variable	Boys with behavioral disorders			Boys without behavioral disorders		
	Adjusted	Unadjusted	SD	Adjusted	Unadjusted	SD
Personal Fable						
Invulnerability	45.47	45.23	8.03	44.19	44.44	7.81
Omnipotence	65.92	66.87	10.27	66.14	65.19	9.40
Personal Uniqueness	44.93	44.52	8.14	46.43	46.84	6.29

Note. $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

Group Differences in Peer and Family Personal-Intimacy and Group-Integration

Means and standard deviations for adolescent boys with and without behavioral disorders on each of the social relational variables examined in this study are presented in Table 7. A series of analyses of variance (ANOVAs) was conducted to determine group differences on the variables of Peer Personal-Intimacy, Peer Group-Integration, Family Personal-Intimacy, and Family Group-Integration. It will be recalled that it was hypothesized that boys with behavioral disorders would have lower levels of personal-intimacy and group-integration with peers and family than boys without behavioral disorders. Analyses yielded one marginally significant finding

indicating that adolescent boys with behavioral disorders reported lower personal-intimacy in their peer relationships than did adolescent boys without behavioral disorders, $F(1, 61) = 3.96, p = .05, \eta^2 = .05$. No significant difference emerged between groups with respect to perceptions of group-integration with peers, $F(1, 61) = 2.22, p = .14, \eta^2 = .04$, perceived personal-intimacy with families, $F(1, 61) = .02, p = .89, \eta^2 = .00$, and perceived group-integration with families, $F(1, 61) = .18, p = .67, \eta^2 = .01$. The strength of the association (effect size) between group status and each of the social relational variables was low (i.e., 5%, Peer Personal-Intimacy; 4%, Peer Group-Integration; 0%, Family Personal-Intimacy; 1%, Family Group-Integration).

Table 7

Means, Standard Deviations, and Ranges of Peer and Family Personal-Intimacy and Group-Integration for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Variable	Boys with behavioral disorders			Boys without behavioral disorders		
	<u>M</u>	<u>SD</u>	Range	<u>M</u>	<u>SD</u>	Range
Peer personal-intimacy	24.71	8.35	7 - 35	28.28	5.69	11 - 35
Peer group-integration	25.90	6.30	11 - 35	27.94	4.40	17 - 35
Family personal-intimacy	28.71	6.90	13 - 35	28.47	6.27	9 - 35
Family group-integration	27.42	7.46	11 - 35	28.19	6.80	11 - 35

Note. $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

Discriminating Between Boys With Behavioral Disorders and Boys Without Behavioral Disorders

In the present investigation, it was of interest to determine whether or not group status could be reliably predicted from performance on the social cognitive and social relational measures. In order to address this, a discriminant function analysis was conducted. As described by Tabachnick and Fidell (1989), although both MANOVA and discriminant function analysis procedures allow for the identification of the combination of variables that best differentiate groups of individuals, discriminant function analysis goes beyond a MANOVA procedure in that it provides a method for

classifying groups based on combinations of scores on predictor variables (in this case, social cognitive and social relational measures). In the present study it was of interest to determine the adequacy of classification by predictor variables in order to more completely understand the combination of the social cognitive and social relational variables that were associated with group status. The statistical concerns regarding use of discriminant function analysis (e.g., missing data, outliers, assumptions of multivariate normality, linearity, multicollinearity, and homogeneity of variance-covariance matrices) were examined in preliminary analyses and determined satisfactory.⁸ In addition, because discriminant function analysis is similar to regression, the criterion used to determine adequacy of sample size for regression analyses was used. Regression analysis requires a minimum of at least 5 times more cases than predictor variables in order to maintain sufficient power for the analysis (Tabachnick & Fidell, 1989). In this study there were 9 predictor variables and 63 cases (i.e., participants). Thus, discriminant analysis was determined to be appropriate for use with the data from the present investigation.

A direct method discriminant function analysis was conducted to determine whether the combinations of social cognitive variables (i.e., Epistemic Reasoning with EDI scored as a continuous variable, Imaginary Audience, Invulnerability, Omnipotence, Personal Uniqueness) and social relational variables (i.e., Peer Personal-Intimacy, Peer Group-Integration, Family Personal-Intimacy, Family Group-

⁸ A tolerance level of .001 was used to investigate problems with multicollinearity and none were found.

Integration) would distinguish adolescent boys with behavioral disorders from adolescent boys without behavioral disorders. Analysis revealed that there was a reliable association between group status and predictors, $\chi^2(9, N = 63) = 25.48, p < .01$. The strength of the association, as measured by canonical correlation, $R^2 = .60$, indicated that 36% of the variance for this discriminant function was shared between group status and predictors. In accordance with conventional guidelines, loadings of less than .30 were not interpreted (Tabachnick & Fidell, 1989). The loading matrix of correlations between the nine predictor variables and the discriminant function, as seen in Table 8, shows that the primary predictor variables for the discriminant function were epistemic reasoning and peer personal-intimacy. Adolescent boys with behavioral disorders, when compared to adolescent boys without behavioral disorders, were significantly lower in level of epistemic reasoning as measured by EDI continuous scores ($M = 5.29$ vs. $M = 7.03$, respectively). In addition, analysis also revealed a marginally significant finding with regard to boys with behavioral disorders in that they reported lower levels of peer personal-intimacy than the boys without behavioral disorders ($M = 24.72$ vs. $M = 28.28$, respectively).

Based on sample sizes of the two groups, the prior probability of correctly classifying participant group membership was estimated to be 49% for adolescent boys with behavioral disorders and 51% for adolescent boys without behavioral disorders. Using the combination of the nine predictor variables, 71% of the participants in this study could be correctly classified as either behaviorally disordered or nondisordered on the basis of their performance on the nine measures. The rate of correct classification was similar between groups (see Table 9). Thus, it can be seen

that classification using the combination of social cognitive and social relational predictors enhanced accurate prediction of participant group membership beyond the prior probability estimates for adolescent boys with and without behavioral disorders.

In sum, the finding from a direct method discriminant function analysis indicates that a combination of social cognitive and social relational variables can significantly enhance prediction of group status (i.e., adolescent boys with behavioral disorders vs. adolescent boys without behavioral disorders). In the present investigation, the best predictors for distinguishing between adolescent boys with behavioral disorders and adolescent boys without behavioral disorders were epistemic reasoning and personal-intimacy in peer relationships.

Table 8

Summary of Discriminant Function Analysis for Social Cognitive and Social Relational Variables Predicting Group Membership

Variable	Correlations with discriminant function	Univariate E (1, 61)
Epistemic reasoning	.84	24.39***
Imaginary audience	-.05	0.07
Invulnerability	-.07	0.16
Omnipotence	-.12	0.46
Personal uniqueness	.22	1.62
Peer personal-intimacy	.34	3.96 [†]
Peer group-integration	.25	2.22
Family personal-intimacy	-.02	0.02
Family group-integration	.07	0.18
Canonical R	.60	
Eigenvalue	.57	

[†]p < .10, *p < .05, **p < .01, ***p < .001.

Table 9

Discriminant Function Classification Summary Table

	n	Predicted Group	
		Boys with behavioral disorders	Boys without behavioral disorders
Boys with behavioral disorders	31	22 (71%)	9 (29%)
Boys without behavioral disorders	32	9 (28%)	23 (72%)
71% of cases were correctly classified			

Interrelations Among Social Cognitive Variables

The purpose of this section is to present the intercorrelations among the social cognitive variables examined in this study (i.e., epistemic reasoning utilizing the EDI continuous variable, imaginary audience, invulnerability, omnipotence, personal uniqueness) separately, for adolescent boys with behavioral disorders and adolescent boys without behavioral disorders.⁹ Because of multiple correlations being computed, to avoid Type 1 error, the alpha level was set at .01.

Adolescent Boys With Behavioral Disorders

It will be recalled that it was hypothesized that the social cognitive variables examined in this study would be related to one another among boys with behavioral

⁹ Correlations for the social cognitive variables were also calculated separately by group, controlling for receptive vocabulary. These partial correlations were found to be comparable to those calculated without controlling for receptive vocabulary, and thus are not reported.

disorders. The hypothesized relations among the dimensions of social cognition were not supported by the results of the present study. Specifically, as can be seen in Table 10, none of the correlations among the social cognitive variables reached statistical significance with regard to adolescent boys with behavioral disorders.

Adolescent Boys Without Behavioral Disorders

Table 10 provides the correlations among social cognitive variables for adolescent boys without behavioral disorders. As hypothesized for boys with behavioral disorders, the social cognitive variables were expected to be related among the adolescent boys without behavioral disorders. Only one of the correlations reached statistical significance. Specifically, a significant and positive relation emerged between omnipotence and invulnerability.

Table 10

**Correlations Among Social Cognitive Variables for Boys With Behavioral Disorders
and for Boys Without Behavioral Disorders**

Variable	1	2	3	4	5
Boys with behavioral disorders ($n = 31$)					
1. Imaginary audience	----	.13	.41	-.07	-.34
2. Invulnerability		----	.10	.01	-.08
3. Omnipotence			----	.40	-.16
4. Personal uniqueness				----	.09
5. Epistemic reasoning					----
Boys without behavioral disorders ($n = 32$)					
1. Imaginary audience	----	-.07	.08	.19	-.43
2. Invulnerability		----	.47*	-.01	-.12
3. Omnipotence			----	-.17	-.30
4. Personal uniqueness				----	.23
5. Epistemic reasoning					----

* $p < .01$.

Relation of Social Cognitive Reasoning to Peer and Family

Personal-Intimacy and Group-Integration

The purpose of this section is to present correlations between social cognitive and social relational variables for adolescent boys with behavioral disorders and adolescent boys without behavioral disorders. It will be recalled that higher levels of personal-intimacy and group-integration with peers and family were expected to be related to higher levels of epistemic reasoning and lower levels of adolescent egocentrism among adolescent boys with behavioral disorders and adolescent boys without behavioral disorders. Table 11 presents the correlations of the social cognitive variables (i.e., epistemic reasoning, dimensions of adolescent egocentrism) to the social relational variables (i.e., peer personal-intimacy, peer group-integration, family personal-intimacy, family group-integration) for each group.

Adolescent Boys With Behavioral Disorders

As can be seen in Table 11, none of the correlations between dimensions of social cognition (epistemic reasoning, imaginary audience, invulnerability, omnipotence, personal uniqueness) and peer and family personal-intimacy and group-integration were statistically significant for adolescent boys with behavioral disorders.

Adolescent Boys Without Behavioral Disorders

For adolescent boys without behavioral disorders, omnipotence was significantly and positively related to family group-integration. In addition, personal uniqueness was significantly and negatively related to peer group-integration. No other correlations reached statistical significance (see Table 11).

Table 11

Correlations Between Social Cognition and Peer and Family Personal-Intimacy and Group-Integration for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Social cognitive variable	Boys with behavioral disorders				Boys without behavioral disorders			
	Peer		Family		Peer		Family	
	PI	GI	PI	GI	PI	GI	PI	GI
Imaginary audience	.45	.46	.29	.34	.13	-.15	.05	.12
Invulnerability	.03	.07	-.00	-.09	.38	.06	-.29	-.15
Omnipotence	.36	.25	.38	.40	.14	.26	.35	.49*
Personal uniqueness	-.13	-.22	.22	.10	.06	-.48*	-.24	-.29
Epistemic reasoning	-.24	-.12	-.11	-.11	-.04	-.12	-.30	-.27

Note. PI = Personal-Intimacy, GI = Group-Integration; $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

* $p < .01$.

In summary, it was hypothesized that the dimensions of social cognition examined in the present study would be significantly associated with both peer and family personal-intimacy and group-integration. These results provide little support for the hypothesized relation. Specifically, among adolescent boys without behavioral

disorders, higher perceptions of group-integration with peers were associated with lower perceptions of personal uniqueness. In contrast to the hypothesis, for boys without behavioral disorders, higher perceptions of family group-integration were associated with higher levels of omnipotence.

Relation of Social Cognitive Reasoning to Teacher-Rated Problem Behaviors

A primary focus of the present investigation was the examination of the relation between dimensions of problem behaviors (i.e., internalizing, externalizing, total problems) and social cognitive reasoning. It was hypothesized that higher levels of problem behaviors would be related to lower levels of epistemic reasoning. Additionally, it was hypothesized that higher levels of problem behaviors would be associated with higher levels of adolescent egocentric ideation. Pearson product-moment correlations were calculated to determine the relation of the social cognitive variables to teacher-rated problem behaviors separately, for each group of boys (i.e., adolescent boys with behavioral disorders, adolescent boys without behavioral disorders).¹⁰

Adolescent Boys With Behavioral Disorders

As can be seen in Table 12, for adolescent boys with behavioral disorders, the hypothesized relation between problem behavior and social cognition was not supported. Specifically, none of the correlations between teacher-reported problem behaviors (i.e., internalizing, externalizing, total problems) and the dimensions of

¹⁰ Scatterplots of the relations between type of problem behaviors and each of the social cognitive variables were examined to determine the existence of non-linear relations. No such relations were found.

social cognition (i.e., epistemic reasoning, imaginary audience, invulnerability, omnipotence, personal uniqueness) reached statistical significance.

Adolescent Boys Without Behavioral Disorders

For adolescent boys without behavioral disorders, there was support for the hypothesized negative relation between problem behavior and epistemic reasoning. As can be seen in Table 12, higher levels of total problems were related to lower levels of epistemic reasoning. No other correlations between teacher-rated problem behaviors and social cognitive measures reached statistical significance.

Table 12

Correlations Between Social Cognition and Teacher-Rated Problem Behaviors for Boys With Behavioral Disorders and for Boys Without Behavioral Disorders

Social cognitive variable	Boys with behavioral disorders			Boys without behavioral disorders		
	Int	Ext	Total	Int	Ext	Total
Epistemic reasoning	-.15	.10	.01	-.25	-.35	-.49*
Imaginary audience	.38	.18	.27	.22	.42	.36
Personal Fable						
Invulnerability	.10	.25	.20	-.42	-.17	-.27
Omnipotence	.11	-.04	-.01	-.08	-.33	-.24
Personal uniqueness	-.08	-.00	-.08	-.19	-.02	-.17

Note. Int = Internalizing problems, Ext = Externalizing problems, Total = Total

Problems; $n = 31$ for boys with behavioral disorders and $n = 32$ for boys without behavioral disorders.

* $p < .01$.

Relation of Social Cognitive Reasoning to Self-Reported Problem Behaviors for Adolescent Boys With Behavioral Disorders

Pearson product-moment correlations were calculated to determine the relation between dimensions of social cognition and self-reported problem behaviors for adolescent boys with behavioral disorders (see Table 13). Among this group of boys, there was some support for the hypothesized relationship that increased levels of

problem behaviors would be associated with higher levels of adolescent egocentrism. Specifically, internalizing problem behavior was significantly and positively associated with imaginary audience ideation. Additionally, total problem behavior was found to be significantly and positively associated with imaginary audience ideation. No other correlations achieved statistical significance.

Table 13

Correlations Between Social Cognition and Self-Reported Problem Behaviors for Boys With Behavioral Disorders (n = 31)

Social cognitive variables	Int	Ext	Total
Epistemic reasoning	-.08	.10	-.03
Imaginary audience	.61**	.27	.50*
Personal Fable			
Invulnerability	.22	.31	.35
Omnipotence	-.11	-.16	-.12
Personal uniqueness	-.19	-.16	-.15

Note. Int = Internalizing problems, Ext = Externalizing problems,

Total = Total Problems.

* $p < .01$, ** $p < .001$.

Regression Analyses Examining the Associations Between Social Cognitive Reasoning and Problem Behaviors

A series of simultaneous regressions was conducted in order to obtain a more comprehensive picture of the associations between problem behavior and social cognition. To examine these associations, internalizing and externalizing problem behaviors served as the dependent variables and dimensions of social cognition (i.e., epistemic reasoning, imaginary audience, invulnerability, omnipotence, personal uniqueness) served as predictor variables. Results from analyses regarding teacher-rated and self-reported problem behaviors of adolescent boys with behavioral disorders are first presented. Following this, the results of analyses concerning the association between teacher-rated problem behaviors and social cognition for adolescent boys without behavioral disorders are delineated.

Adolescent Boys With Behavioral Disorders

It will be recalled that among adolescent boys with behavioral disorders, lower levels of social cognition (i.e., lower epistemic reasoning, higher adolescent egocentrism) were expected to be associated with higher levels of problem behaviors. As can be seen in Table 14, the results of the regression analysis examining the association between social cognition and teacher-reported internalizing problem behaviors was not significant. Additionally, the results of the analysis in which the association between social cognition and teacher-reported externalizing problem behaviors was examined was not significant.

In the next set of regression analyses, self-reports of problem behaviors served as the dependent variables and the dimensions of social cognition were the

independent variables. The results of the regression analyses provide some support for the hypothesized relation that higher levels of self-reported problem behavior would be related to lower levels of epistemic reasoning and to higher levels of adolescent egocentrism among adolescent boys with behavioral disorders. This model accounted for 57% of the variance in self-reported internalizing problem behaviors. With regard to internalizing problem behaviors, results in Table 14 suggest that for adolescent boys with behavioral disorders, both imaginary audience ideation and omnipotence emerged as significant independent predictors. For adolescent boys with behavioral disorders, imaginary audience was positively associated with self-reports of internalizing problem behaviors whereas omnipotence was negatively associated with self-reports of internalizing problem behaviors.

As can be seen in Table 14, the relation between self-reported externalizing problem behaviors and the social cognitive variables approached significance. Overall, the model accounted for 30% of the variance in self-reported externalizing problem behaviors. Examination of the individual standardized beta weights indicated that imaginary audience and invulnerability were both positively predictive of self-reported externalizing problem behaviors, although the latter association was only marginally significant.

Table 14

Results of Simultaneous Regressions of Social Cognitive Variables on Internalizing and Externalizing Problem Behaviors for Boys With Behavioral Disorders

Predictor	TRF Int		TRF Ext		YSR Int		YSR Ext	
	β	t value	β	t value	β	t value	β	t value
Epistemic reasoning	.09	0.46	.15	0.74	.11	0.75	.22	1.24
Imaginary audience	.34	1.50	.24	1.06	.83	5.33***	.45	2.24*
Invulnerability	-.05	-0.29	.21	1.10	.16	1.23	.31	1.85†
Omnipotence	-.04	-0.17	-.12	-0.52	-.55	-3.37**	-.30	-1.44
Uniqueness	-.04	-0.19	.01	0.04	.14	0.97	-.04	-0.19
Overall F (5, 25)	.55		.54		6.71***		2.12†	
R ²	.10		.10		.57		.30	

Note. Int = Internalizing subscale, Ext = Externalizing subscale.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

In summary, the results of a series of simultaneous regression analyses provide some support for the hypothesized expectation that higher levels of problem behaviors would be negatively associated with epistemic reasoning and positively associated with dimensions of adolescent egocentrism for adolescent boys with behavioral disorders. It is particularly noteworthy that support for the hypothesis was found only when problem behaviors were reported by the youths themselves.

Adolescents Without Behavioral Disorders

To further examine the association between social cognition and problem behavior for adolescent boys without behavioral disorders, simultaneous regression analyses were conducted in which teacher-reported problem behaviors were the dependent variables and epistemic reasoning and dimensions of adolescent egocentrism were the predictor variables. As can be seen in Table 15, with regard to internalizing problem behaviors, overall, 29% of the variance was accounted for by the model. Examination of the individual standardized beta weights indicated a significant negative relation between teacher-rated internalizing problem behaviors and invulnerability. Specifically, invulnerability was found to be the only significant negative predictor of teacher-reported internalizing problems.

With regard to the prediction of teacher-reported externalizing problem behaviors, as can be seen in Table 15, imaginary audience was found to be a significant and positive predictor for adolescent boys without behavioral disorders. Additionally, omnipotence was also found to be a marginally significant negative independent predictor of teacher-reported problem behaviors. This model accounted for 37% of the total variance in teacher-reported externalizing problem behaviors.

Table 15

Results of Simultaneous Regressions of Social Cognitive Variables on Internalizing and Externalizing Problem Behaviors for Boys Without Behavioral Disorders

Predictor	TRF Int		TRF Ext	
	β	t value	β	t value
Epistemic reasoning	-.21	-1.03	-.29	-1.52
Imaginary audience	.02	0.10	.40	2.18*
Invulnerability	-.42	-2.20*	.01	0.08
Omnipotence	.03	0.15	-.34	-1.81†
Uniqueness	-.27	-1.46	-.07	-0.41
Overall F (5, 26)		2.11†		3.05*
R ²		.29		.37

Note. Int = Internalizing subscale, Ext = Externalizing subscale.

† $p < .10$, * $p < .05$.

In sum, with regard to adolescent boys with behavioral disorders, epistemic reasoning and dimensions of adolescent egocentrism were not found to significantly predict problem behaviors when the problem behaviors were assessed via teacher-report. Yet, for this group of adolescents, when self-reports of problem behaviors were considered, the social cognitive variables of imaginary audience and omnipotence were found to significantly predict internalizing problem behaviors. As well, a trend was observed for the prediction of self-reported externalizing behaviors,

with imaginary audience demonstrating significant predictive value and invulnerability showing a marginal relation.

For the group of adolescent boys without behavioral disorders, the group of social cognitive variables tended to predict teacher-reported internalizing problem behaviors with invulnerability having significant predictive value. In addition, the imaginary audience, along with omnipotence, significantly predicted teacher-reported externalizing problem behaviors, although omnipotence was only marginally significant in this prediction.

Discussion

The discussion of the present study is presented in three sections. The first section includes a summary and a discussion of the findings concerning each of the hypotheses put forth in this investigation. In the second section, considerations of the strengths and limitations of the study are made. In the final section, a discussion of the implications for further research on the social cognitive development of adolescents with behavioral disorders is presented.

Discussion of Findings

Group Differences in Psychopathology

Prior to discussing the principal findings of this investigation concerning differences between adolescent boys with behavioral disorders and adolescent boys without behavioral disorders, it is important to first highlight the presence of group differences in psychopathology. Indeed, a noteworthy strength of this study is the rigorous efforts that were utilized to insure that adolescents comprised two groups distinguished solely by their level of psychopathology. Such efforts, although rarely seen in empirical investigations of this nature (Smetana, 1990), are particularly critical for researchers who wish to make claims concerning the association between social cognition and psychological dysfunction (e.g., Chandler & Moran, 1990; Cohen & Strayer, 1996; Lee & Prentice, 1988; Lochman & Dodge, 1994).

Two strategies were used to insure that adolescent boys comprised distinct groups. First, it may be recalled that adolescent boys were initially drawn from two different populations based on educational criteria: one group consisting of individuals who had been identified as having “behavioral disorders” by members of a school

district multidisciplinary team who utilized criteria outlined by Washington State (1995), and one group consisting of boys drawn from the "general" school population. In order to obtain further specificity regarding group distinctions, the following criteria were utilized in the selection of the final sample of adolescent boys for the "non-behavioral disorders group": (a) The boy was not receiving any kind of special educational services, and (b) the boy had not received excessive amounts of behavioral referrals according to school administrators and counselors. The final sample of boys without behavioral disorders, in meeting these stringent criteria, were also selected to match the adolescents with behavioral disorders on age and ethnicity.

Second, in addition to relying on the educational diagnosis of "behavioral disorders," data regarding self-reports and teacher-reports of problem behaviors were collected in order to obtain some confirmation of the presence of group differences in regard to psychopathology. Obtaining additional information regarding psychopathology helps to address problems that may be inherent when relying on somewhat ambiguous educational classification systems, particularly when previous findings for groups so labelled have yielded inconsistent findings. In the present investigation, findings revealed that, by their own reports (i.e., YSR, Achenbach, 1991b) and the reports of their teachers (i.e., TRF, Achenbach, 1991a), the group of adolescent boys with behavioral disorders was clearly representative of a different population than the nondisordered group. For example, the scores of boys with behavioral disorders were in the clinical range, as identified by Achenbach's (1991a, 1991b) norms, for both self-reported and teacher-reported internalizing and externalizing problem behaviors, whereas the scores of the boys without behavioral

disorders were in the nonclinical range for both types of problem behaviors. Finally, results indicated that, when rated by teachers, boys with behavioral disorders were significantly higher on all dimensions of psychopathology (i.e., internalizing, externalizing, total problems) than adolescents without behavioral disorders. Thus, the present findings regarding group differences in psychopathology provide some validity to the classification system used by special educators to identify adolescents with behavioral disorders.

Group Differences in Social Cognitive Reasoning

Epistemic reasoning. The results of this study support the hypothesis that adolescent boys with behavioral disorders are significantly lower in epistemic reasoning than their peers without behavioral disorders. This difference was found in instances in which either the EDI continuous score or the EDI categorical score was utilized. With respect to the analyses concerning the EDI continuous score, it should be noted that a difference between groups was evident even after controlling for group differences in receptive vocabulary.

In regard to analyses concerning group differences on predominant epistemic stances held by individuals wherein the EDI categorical score was utilized, as predicted, the majority of adolescent boys with behavioral disorders reasoned from less mature stances in comparison to the adolescent boys without behavioral disorders. Specifically, when the EDI categorical scores were considered, 52% of the boys with behavioral disorders displayed reasoning consistent with the less mature epistemic posture of defended realism, whereas only 19% of the boys without behavioral disorders were found to reason from this stance. In contrast, the majority

of the boys without behavioral disorders displayed epistemic reasoning consistent with the more advanced postures of generic doubt (i.e., 63%) and postskeptical rationalism (i.e., 19%). Among the boys with behavioral disorders, only 48% were found to reason from the stance of generic doubt, and none of them displayed reasoning consistent with the most advanced posture of postskeptical rationalism. Thus, the findings of this study support Chandler et al.'s (1990) contention that adolescents remaining at lower levels of epistemic reasoning, specifically at the stance of defended realism, would be "seriously over-represented in groups marked by their habitual adjustment failure" (p. 391).

The finding that the epistemic reasoning of the boys with behavioral disorders was significantly less mature than the reasoning of boys without behavioral disorders is consistent with prior research in the domain of epistemic reasoning and psychopathology. To this author's knowledge, only one published study exists that has examined epistemic reasoning in relation to psychopathology. In an investigation of 28 hospitalized adolescents and 29 non-hospitalized adolescents (mean age = 15.33 years), Chandler et al. (1990) found that hospitalized adolescents described as having serious social-emotional adjustment problems were more likely to reason at the level of defended realism (79%) in comparison to those adolescents in the matched control group (24%). Taken together, these findings lend some insight into the nature of reasoning utilized by adolescents with various degrees of psychopathology.

In addition to demonstrating significant differences in the overall epistemological reasoning of adolescent boys with and without behavioral disorders,

the findings also illustrate differences in the epistemic reasoning of boys with and without behavioral disorders at a more micro level. It may be recalled that the level of epistemic reasoning referred to as generic doubt includes two related forms of reasoning--dogmatism and skepticism. These epistemic orientations are related in that those individuals reasoning from either end of the generic doubt axis share in the assumption that all knowledge is subjective, and therefore suspect. One critical difference in these epistemological orientations, however, concerns the way in which persons in authority are viewed. Adolescents primarily reasoning from a skeptical orientation believe that no one has access to unbiased information, and, as a consequence, believe that all authority is wrong. In contrast, adolescents primarily reasoning from a dogmatic orientation believe that experts may have access to knowledge beyond the adolescent's grasp, and therefore, accept the possibility that an authority figure is right (Boyes & Chandler, 1992).

As anticipated, the present data indicated that, of the 15 boys with behavioral disorders reasoning from a generic doubt stance, a large proportion of them responded to the EDI in a manner reflective of a skeptical orientation (i.e., $n = 13$). With regard to the 17 adolescent boys without behavioral disorders displaying reasoning from the stance of generic doubt, approximately half of them responded in a manner reflective of a dogmatic orientation (i.e., $n = 8$). These findings provide one possible interpretation for the excessive conflicts with authority experienced by adolescents with behavioral disorders that have been noted in the literature (e.g., Kauffman, 1997; Korterling & Blackorby, 1992; McIntyre, 1993). Perhaps it is the case that the common negative responses of adolescents with behavioral disorders to

persons in authority are reflections of their underlying epistemic orientations. More research is clearly needed to further discern the relation between skeptical reasoning and conflict in adolescent-adult interactions.

In addition to emerging as a significant factor in differentiating between groups at the univariate level, epistemic reasoning also emerged as an important discriminating social cognitive variable at the multivariate level. Specifically, results from a discriminant function analysis indicated that, when all the social cognitive and social relational variables were considered, epistemic reasoning was the one variable that served to significantly differentiate between groups, with those labeled as behaviorally disordered scoring lower in epistemic reasoning than those without the label of behavioral disorders. Such findings uniquely contribute to the literature on the relation between social cognition and psychopathology by demonstrating the significance of epistemic reasoning to psychopathology.

In sum, the present findings are in accord with previous research linking delays or deficits in epistemic reasoning to psychopathology. More precisely, when utilizing either the continuous or the categorical score from the EDI, adolescent boys with behavioral disorders predominantly reasoned at lower levels of epistemic reasoning than their matched peers without behavioral disorders. The present study extends findings of previous investigations in at least two respects. First, it replicates key aspects of Chandler et al.'s (1990) research on epistemic reasoning among psychiatrically hospitalized adolescents while extending these results to an all male sample of adolescents identified in the public school system as having "behavioral disorders." Second, it extends this work by more specifically examining the nature of

the differences in epistemic reasoning on the dogmatic/skeptical axis of the generic doubt stance.

Adolescent egocentrism. Since the time that Elkind first used the terms imaginary audience and personal fable to describe the egocentric behaviors typical of adolescence, several researchers have explored these dimensions of adolescent egocentrism (e.g., Garber et al., 1993; Lapsley et al., 1989; Lapsley et al., 1996; Schonert-Reichl, 1994a). Although not empirically examined prior to the present study, Elkind (1967) theorized that adolescents in atypical populations would have higher levels of imaginary audience and personal fable than their typical peers. The present results do not support the hypothesis that adolescent boys with behavioral disorders would be more egocentric (with regard to the dimensions of adolescent egocentrism--namely imaginary audience and personal fable) than their matched peers without behavioral disorders.

Although no significant between group differences were found in imaginary audience in the present investigation, it should be recalled that receptive vocabulary (the covariate in the present study) could not be statistically controlled because of a violation of the homogeneity of regression assumption that rendered the interpretation of these results inconclusive. Nevertheless, it is interesting to note that, with regard to the dimension of the imaginary audience, the mean scores of the boys with and without behavioral disorders in the present investigation are comparable to those found among nondisordered adolescent boys in previous research (e.g., Lapsley et al., 1989).

With respect to an adolescent's sense of personal fable, or feelings of invulnerability, omnipotence, and personal uniqueness, contrary to expectations, in the present study no significant differences were found between adolescent boys with and without behavioral disorders, even when statistically controlling for receptive vocabulary. The absence of a difference between groups on all of the dimensions of adolescent egocentrism was unexpected given the preponderance of research findings linking adolescent egocentrism to problem behaviors, such as drug and alcohol usage, drunken driving, depression, and unprotected sex (e.g., Arnett, 1990; Baron, 1986; Garber et al., 1993; Holmbeck, et al., 1994; Lapsley et al., 1996; Schonert-Reichl, 1994a). And given that adolescents with behavioral disorders, by definition, engage in a greater amount of problem behaviors than their peers without behavioral problems, one would expect them to possess higher levels of egocentric thinking. Nonetheless, there exist at least three possible explanations for the null findings. First, it may be that there are indeed no differences between adolescents with and without behavioral disorders in adolescent egocentric ideation. In fact, some empirical evidence exists supporting such a contention. More specifically, it should be noted that both the mean scores of boys with and without behavioral disorders in the present study on the dimensions of the imaginary audience and personal fable (i.e., invulnerability, omnipotence, personal uniqueness) are similar to those identified in previous research among adolescents in nondisordered populations. For instance, Schonert-Reichl (1994a) utilized the NPFS (the same measure used in the present study) in a study of adolescents ranging in age from 12 to 17 years. The mean scores found in the present study for boys with and without behavioral disorders, respectively,

on the dimension of invulnerability (i.e., $M = 45.23$, $M = 44.44$), are almost identical to the mean scores of the early and middle adolescent boys in Schonert-Reichl's study (i.e., $M = 44.61$, $M = 43.60$, respectively). Although the mean scores found in the present study for omnipotence and personal uniqueness, respectively, among boys with behavioral disorders (i.e., $M = 66.87$, $M = 44.52$) and boys without behavioral disorders, (i.e., $M = 65.19$, $M = 46.84$) are not identical to the mean scores for omnipotence and personal uniqueness, respectively, of the early (i.e., $M = 62.50$, $M = 42.46$) and middle (i.e., $M = 60.15$, $M = 41.46$) adolescent boys in Schonert-Reichl's study, the present means are well within one standard deviation of those found by Schonert-Reichl. Thus, these comparisons lend some support to the notion that the adolescent boys with behavioral disorders are not significantly higher in egocentric ideation than nondisordered boys. So one question arises as to why we see so many behaviors typically associated with higher levels of egocentrism among adolescents with behavioral disorders. Perhaps it is that the nature of the behaviors that result from egocentric thinking differs for boys with behavioral disorders than for boys without behavioral disorders.

A second explanation for the null findings concerning adolescent egocentrism is that it is not so much that boys with behavioral disorders are more egocentric than boys without behavioral disorders, but rather that groups differ with respect to their developmental trajectory in adolescent egocentrism. For instance, it may be that adolescents with behavioral disorders are similar to adolescents in nondisordered populations with respect to their tendency to self-focus during adolescence. As noted by Enright et al. (1980), adolescent egocentrism is a form of normative "distortion" in

perspective-taking whereby the adolescent misinterprets the focus of other's attention, and instead attributes his or her own self-focus to that of the other person. In other words, the adolescent views him or herself as the object of everyone's attention. This "distorted" form of thinking might be normative during adolescence, and characterize the thinking of adolescents regardless of the presence or absence of psychopathology. Nevertheless, it may be that adolescents with behavioral disorders never outgrow this type of thinking. That is, unlike typical adolescents, adolescents with behavioral disorders may become arrested in their egocentric thinking. In the future, longitudinal research that examines the developmental trajectory of adolescent egocentrism among adolescents with behavioral disorders in comparison to their nondisordered peers will be informative as to whether or not this group of adolescents is delayed or arrested in their development in this domain.

A third possible explanation for the absence of differences between the two groups on adolescent egocentrism may be that the measures used to assess imaginary audience and personal fable did not adequately discern the egocentric thinking of adolescents with behavioral disorders from that of their nondisordered peers. For example, it may be that in nondisordered populations, adolescents experiencing adolescent egocentrism engage in egocentric thinking that is socially acceptable (e.g., thinking about engaging in school performances or athletics). In contrast, adolescents with behavioral disorders may engage in egocentric thinking that falls outside of acceptable social standards (e.g., thinking about bullying others and getting away with it). Although the measures utilized in the present study address egocentric thought of the former style, they do not address egocentric thinking of the

latter style. Undoubtedly, further research is needed to clarify our understanding of the nature of egocentric thought among adolescents with behavioral disorders in comparison to nondisordered adolescents.

Group Differences in Social Relationships

Given the preponderance of empirical evidence linking positive peer and family relationships to psychological adjustment, an unexpected finding of the present study was the relative absence of significant group differences on dimensions of peer and family personal-intimacy and group-integration. More specifically, of the four dimensions of social relationships examined in the present study, only one dimension--personal-intimacy with peers--approached significance. Specifically, adolescent boys with behavioral disorders reported lower levels of personal-intimacy with peers than those adolescent boys without behavioral disorders.

A number of researchers have demonstrated that adolescents with behavioral disorders have poorer social relationships than their nondisordered peers (e.g., Farmer & Hollowell, 1994; Sabornie, 1987; Sabornie & Kauffman, 1985; Vacc, 1968, 1972). More generally, researchers have established a positive association between social relationships and adjustment among adolescents (e.g., Buhrmester, 1990; Gibbs, 1987; Henggeler, 1982; Marcus & Betzer, 1996; Panella & Henggeler, 1986; Schonert-Reichl, 1995). For example, Marcus and Betzer (1996) found that, among early adolescents, self-reported attachment (e.g., communication, trust) with mothers, fathers, and close friends were negatively related to antisocial behavior (e.g., delinquent behavior). Further, in an investigation using both self-reports and reports of close friends, Buhrmester (1990) found that among 70 adolescents (ages 13 to 16),

friendship intimacy (i.e., self-reported, friend-reported) was positively related to sociability and self-esteem, and negatively related to hostility and anxiety/depression. Thus, the findings of the present investigation are in accord with previous research in suggesting that adolescents with higher levels of psychopathology would have lower intimacy with peers.

Boys with behavioral disorders did not differ, however, from their peers without behavioral disorders on reported levels of group-integration with peers, personal-intimacy with family, and group-integration with family. This lack of differentiation between groups across the majority of measures of social relationships is in contradiction with one of the defining characteristics of adolescents with behavioral disorders, namely, serious difficulty in social relationships with both peers and adults (e.g., Kauffman, 1997; Meadows et al., 1994).

With regard to peer group-integration (operationalized here as the degree to which an adolescent perceives that he is part of a peer group who does things together), the null findings of the present investigation are in stark contrast to previous research findings indicating that children and adolescents with behavioral disorders are rejected by their peers (e.g., Sabornie, 1987; Sabornie & Kauffman, 1985; Vacc, 1968, 1972). There exist at least two possible explanations for the absence of significant differences in perceived group-integration with peers between adolescent boys with behavioral disorders and adolescent boys without behavioral disorders. First, it may be that the veracity of the self-reports of adolescent boys with behavioral disorders is suspect. That is, it is possible that these adolescents are inaccurate and/or biased reporters of their own peer relationships. Findings from research

conducted with samples similar to the one in the present study lend some support to such a contention. For example, Hymel et al. (1993) found that when comparisons were made between aggressive children's self-reports and the reports of their nonaggressive peers, aggressive children overestimated their social competency with regard to peer relationships. It is conceivable, therefore, that in the present study, adolescent boys with behavioral disorders overestimated the degree to which they were part of a group of peers.

A second interpretation for the lack of a difference between groups on group-integration with peers is that perhaps the boys with behavioral disorders in the present study do in fact have peer groups with whom they feel connected. Recent research by Farmer and colleagues (e.g., Farmer, 1994; Farmer & Hollowell, 1994) supports the view that adolescents with behavioral disorders do affiliate with peers and are members of peer clusters. Farmer and Hollowell (1994) measured the extent to which 20 boys and girls with emotional and behavioral disorders (EBD) in 16 mainstream classrooms had social affiliations with peers. Social affiliations were operationalized in terms of an individual's social network centrality, or the degree to which the individual was perceived to be a member of a peer cluster. These researchers found that over 80% of the boys with EBD were identified as members of peer clusters. Moreover, boys with EBD were as likely as boys without EBD to be represented in the two highest levels (i.e., nuclear and secondary as opposed to peripheral or isolated) of social network centrality. What is interesting to note about Farmer and Hollowell's study is the finding that the peer clusters in which boys with EBD were members were characterized with significantly higher levels of peer-assessed aggression and

disruption in comparison to the clusters that did not contain a boy with EBD. Thus, these findings suggest that although children with behavioral disorders do experience social integration and peer affiliations, their peer networks are predominantly comprised of peers with problem behaviors. Therefore, the current finding of no differences between groups on group-integration with peers may be an accurate reflection of their peer experiences.

With regard to relationships with family, no differences were found between boys with behavioral disorders and boys without behavioral disorders. One possibility for the unexpected null findings on either personal-intimacy or group-integration is that perhaps adolescent boys with behavioral disorders do not differ from their nondisordered peers in their relationships with family. In the present study, the measure used to assess relationship quality referred to relationships with family members (i.e., "In my family, I feel a part of a group of people that do things together"), and was not limited to relationships with parents. Findings from previous research suggest that adolescents with problem behaviors have difficulty in their relationships with parents (e.g., Marcus & Betzer, 1996; Patterson, 1986). Much less, however, is known about the relationships of these adolescents with other family members (e.g., siblings, grandparents, aunts). It may be that the boys with behavioral disorders are intimate and socially integrated with some, but not necessarily with all, members of their family.

In summary, findings from the present investigation provide limited support for the hypothesis that boys with behavioral disorders have lower quality social relationships than boys without behavioral disorders. Although a marginally significant

finding emerged indicating that boys with behavioral disorders reported lower levels of personal-intimacy in their relationships with peers than boys without behavioral disorders, no differences were found between groups on the measures of group-integration with peers, personal-intimacy with family, or group-integration with family. Clearly, future investigations are necessary to disentangle the specific nature of social relationships with regard to various relationship sources among adolescents with behavioral disorders. A next step would be to more specifically examine conceptualizations about the nature and function of peer and family relationships among adolescents with behavioral disorders in comparison to nondisordered adolescents.

Interrelations Among Social Cognitive Variables

One of the purposes of this study was to examine interrelations among various social cognitive variables in adolescent boys with and without behavioral disorders. An examination of links among dimensions of social cognition for both typical and atypical adolescent populations is important for increasing understanding of developmental processes and mechanisms (Cicchetti, 1989, 1993; Cicchetti & Cohen, 1995; Noam et al., 1995; Sroufe, 1990). Researchers who have examined multiple dimensions of social cognition in singular studies have assembled a more inclusive portrait of development across a variety of domains of social cognitive functioning of both adjusted and maladjusted youth (e.g., Chandler & Moran, 1990; Ford, 1982; Lee & Prentice, 1988; Trevethan & Walker, 1989).

In the present investigation, it was hypothesized that epistemic reasoning and adolescent egocentrism would be inversely related among adolescent boys with and

without behavioral disorders. This hypothesis was based, in part, on previous research among adolescents indicating significant relations among various dimensions of social cognition (e.g., Chandler & Moran, 1990; Davis & Franzoi, 1991; Ford, 1982; Lochman & Dodge, 1994; Trevethan & Walker, 1989). For example, researchers have found higher levels of moral reasoning to be associated with higher levels of empathy (e.g., Schonert-Reichl, 1994b). Although researchers have identified relations among a variety of social cognitive variables, it should be noted that the present investigation is the first empirical study to specifically examine the association between epistemic reasoning and egocentrism.

In the present study, no significant relations emerged between epistemic reasoning and the imaginary audience and personal fable dimensions of adolescent egocentrism for either group of adolescent boys. Thus, although findings from previous research suggest associations between some dimensions of social cognition, the present results suggest that epistemic reasoning and adolescent egocentrism are not related. It is possible, however, that epistemic reasoning and adolescent egocentrism are related in more complex ways than examined here.

In contrast to the absence of previous research examining the relation between epistemic reasoning and adolescent egocentrism, research exists that has investigated the interrelations between the imaginary audience and the dimensions of the personal fable (i.e., invulnerability, omnipotence, personal uniqueness). According to theoretical predictions, the imaginary audience and personal fable should be positively related (Elkind, 1967). Research conducted among nondisordered adolescent populations examining the interrelations among dimensions of adolescent

egocentrism has yielded inconsistent results (e.g., Garber et al., 1993; Lapsley et al., 1989; Lapsley et al., 1988; Schonert-Reichl, 1994a). Indeed, whereas some researchers have found significant and positive relations between the imaginary audience and the personal fable (e.g., Garber et al., 1993; Lapsley et al., 1988; Lapsley et al., 1986), other researchers have found these dimensions of adolescent egocentrism to be negatively related (e.g., Schonert-Reichl, 1994a), and still other researchers have found them to be unrelated (Goossens, Seiffge-Krenke, & Marcoen, 1992; Lapsley et al., 1989).

In the present investigation, the findings indicated that the relations between the imaginary audience and the dimensions of the personal fable were nonsignificant for either group of adolescent boys. Although these findings do not support the anticipated positive relation between imaginary audience and personal fable, they are consistent with previous research findings among nondisordered adolescent samples when, as in the present study, the NPFS and NIAS were utilized to measure adolescent egocentrism (e.g., Lapsley et al. 1989). For example, Lapsley et al. (1989), in an exploration of the relation between separation-individuation and adolescent egocentrism, utilized the NIAS and NPFS and found no relation between the imaginary audience and personal fable.

Unlike the absence of significant results for the relation between the imaginary audience and personal fable, an association was found between two dimensions of the personal fable for adolescent boys without behavioral disorders. More specifically, for boys without behavioral disorders, there was a significant and positive relation between omnipotence and invulnerability. This finding is consistent with those of

previous research studies among nondisordered adolescents when the NPFS was utilized to measure dimensions of the personal fable (e.g., Lapsley et al., 1989; Lapsley et al., 1996). No significant relations emerged among dimensions of the personal fable for adolescent boys with behavioral disorders.

In summary, significant relations between epistemic reasoning and dimensions of adolescent egocentrism were not observed for adolescent boys with or without behavioral disorders. Additionally, imaginary audience ideation was not significantly associated with personal fable ideation in either group. The one relation that did emerge as significant was the association between omnipotence and invulnerability for boys without behavioral disorders. Although the present results do not provide unequivocal support for the hypotheses that the dimensions of social cognition examined in this study would be interrelated, the results are, for the most part, in line with those findings from recent empirical investigations (e.g., Lapsley et al. 1989; Lapsley et al., 1996). Undoubtedly, the interrelations among epistemic reasoning, imaginary audience, and personal fable are complex and additional research is needed to more fully understand the nature of the interrelations among these dimensions of social cognition.

Relation of Social Cognitive Reasoning to Social Relationships

A secondary focus of the present investigation was to explore the relations of dimensions of social cognition to social relationships with peers and family. As previously noted, the relation between social cognition and social relationships is thought to be important because of the widely held belief that social relationships have been identified as one of the primary mechanisms of social cognitive development

(Elkind, 1967; Hartup, 1986; Parker et al., 1995; Youniss, 1987). For example, with regard to adolescent egocentrism, Elkind (1967) theorized that social relationships would assist the adolescent in overcoming the egocentric perspective-taking errors that lead to imaginary audience and personal fable construction, and thus lead to decreases in adolescent egocentric ideation. Therefore, in the present study it was hypothesized that higher quality social relationships with peers and family would be associated with higher levels of epistemic reasoning and lower levels of adolescent egocentric ideation. Social relationships were operationally defined as personal-intimacy and group-integration with peers and family. In the present study, no significant relation emerged between epistemic reasoning and personal-intimacy and group-integration with peers or family for either group of adolescent boys.

Furthermore, no significant relation was found between imaginary audience and the personal-intimacy and group-integration with peers and family for boys with or without behavioral disorders. Thus, with regard to epistemic reasoning and imaginary audience, results do not support the hypothesized relation of social cognition to social relationships. Nevertheless, no firm conclusions can be drawn that social relationships do not play an integral role in fomenting development in epistemic reasoning and imaginary audience ideation. For instance, it may be that perceptions of personal-intimacy and group-integration with peers and family are not those dimensions of social relationships that are salient in social cognitive development.

Some support for the hypothesized relation of social cognition to personal-intimacy and group-integration with peers and family was found with regard to the personal fable among the group of boys without behavioral disorders. Specifically,

among boys without behavioral disorders, personal uniqueness was significantly and negatively related to group-integration with peers. As theorized by Elkind (1967), personal relationships allow adolescents the opportunity to encounter others' viewpoints, leading to a decline in personal fable ideation. Consequently, a socially integrated adolescent would have numerous opportunities to gain awareness of his similarities to peers. Nonetheless, perhaps the reason this relation was not found among the adolescent boys with behavioral disorders is that the nature of their group-integration with peers does not provide them with the same opportunities to exchange viewpoints as their nondisordered peers. Recently, researchers have suggested that adolescents with problem behaviors have peer relationships that are of lower quality than those of adolescents without problem behaviors (e.g., Dishion et al., 1995; Schonert-Reichl, 1993, 1995). For example, in a study examining the social relationships of adolescents with problem behaviors, Schonert-Reichl (1995) found that adolescents with problem behaviors were more likely than their nonproblematic peers to report that their best friendships were higher in conflict and betrayal and provided less companionship and recreation than the friendships of their peers without problem behaviors. Future research should more specifically examine the nature of the peer interactions experienced by adolescents with problem behaviors in their social relationships in order to better comprehend the social interactional mechanisms involved in the development of social cognitive reasoning among adolescents with problem behaviors.

A significant and positive relation was found between omnipotence and group-integration with family among the boys without behavioral disorders. This finding is in

opposition to the relation hypothesized in the present study because, as previously mentioned, it has been theorized that adolescent egocentrism should decline with an increase in the quality of social relationships (Elkind, 1967). One possible explanation for the current finding is that, among boys without behavioral disorders, perceptions of higher levels of group-integration within the family context foster a sense of omnipotence. That is, family members either implicitly or explicitly convey the message that these boys “can do anything they put their mind to.” Findings from recent research suggest that among nondisordered adolescents, families provide a great source of support “both in day-to-day matters and in emergency situations” (Frey & Röthlisberger, 1996, p. 26). In light of these recent research findings, although the positive relation between omnipotence and group-integration with family was not in the direction hypothesized in the present study, it is not necessarily surprising. However, with regard to the boys with behavioral disorders, perhaps the reason this same relation was not found is that the support provided them by their families differs from that provided the nondisordered boys in a manner not examined by the measure used in the present investigation.

In summary, findings from the present study did not support the anticipated relations between dimensions of social cognition and social relationships with peers and family for the group of adolescent boys with behavioral disorders. Some significant associations, however, emerged for the group of adolescent boys without behavioral disorders. More specifically, for boys without behavioral disorders, the negative relation between personal uniqueness and group-integration with peers was

in the hypothesized direction, whereas the positive relation between omnipotence and group-integration with family was not. No other significant relations were found.

Relation of Social Cognitive Reasoning to Problem Behaviors

Researchers examining social cognition during adolescence have found positive associations between social cognition and adjustment (e.g., Chandler, 1973; Demorest, 1992; Downey & Walker, 1989; Kohlberg, 1978; Lenhart & Rabiner, 1995; Lochman & Dodge, 1994; Pellegrini, 1985). For example, Lenhart and Rabiner (1995) found that adolescents who were more skilled in social problem-solving were rated as less aggressive by their teachers and rated themselves as lower on problem behaviors in comparison to adolescents who were less skilled in social problem-solving. Lochman and Dodge (1994) found severely aggressive and moderately aggressive adolescents to be significantly lower in comparison to nonaggressive adolescents across a number of social cognitive variables (i.e., perceptions of social cues, social problem solving, self-perceptions, outcome expectations). Moreover, their results indicated that the degree of social cognitive deficit varied by the severity of maladjustment. That is, the greatest social cognitive deficits were found among the severely aggressive group, followed next by the moderately aggressive group, with the highest level of social cognitive functioning found among the nonaggressive group of adolescents. In the present study it was hypothesized that maladjustment (i.e., internalizing, externalizing, total problems) would be negatively related to epistemic reasoning and positively related to imaginary audience and personal fable. Results from correlation and regression analyses conducted to determine the association of

self-reported and teacher-reported types of problem behaviors to epistemic reasoning and the dimensions of adolescent egocentrism are now discussed, in turn, below.

Epistemic reasoning and problem behaviors. In the present study it was anticipated that epistemic reasoning would be negatively related to problem behaviors among adolescent boys with and without behavioral disorders. As hypothesized, with regard to adolescent boys without behavioral disorders, higher levels of teacher-reported total problem behaviors were associated with lower epistemic reasoning. This finding suggests yet another connection between social cognitive functioning and adjustment among nondisordered adolescents by identifying epistemic reasoning as a social cognitive construct that is lower among adolescents with greater numbers of problem behaviors in comparison to adolescents with fewer numbers of problem behaviors. Indeed, the negative relation that emerged between epistemic reasoning and teacher-reported total problems among boys without behavioral disorders in the present investigation is in concert with previous research that suggests a negative association between social cognitive reasoning and problem behaviors among adolescents (e.g., Chandler & Moran, 1990; Cohen & Strayer, 1996; Leadbeater et al., 1989; Lenhart & Rabiner, 1995; Waterman et al., 1981).

In contrast to the negative and significant relation between epistemic reasoning and total problems among adolescent boys without behavioral disorders, no significant relations were found between epistemic reasoning and either teacher-reported problem behaviors or self-reported problem behaviors among the adolescent boys with behavioral disorders. Perhaps the reason why the hypothesized relations were not supported among adolescents with behavioral disorders is that epistemic

reasoning is not associated with the behaviors assessed in the present investigation. Epistemic reasoning is a social cognitive process used to describe how one reasons about conflicting information. Thus, it may be that among boys with behavioral disorders, epistemic reasoning is related to problems such as conflict with authority, rather than to more generic forms of problem behaviors (i.e., internalizing, externalizing, total problems). In order to further our understanding of the relation between epistemic reasoning and problem behaviors, it would behoove future researchers to examine the connection between epistemic reasoning and a variety of problem behaviors (e.g., conflict with authority).

Imaginary audience and problem behaviors. The relation between imaginary audience and teacher-reported internalizing problem behaviors was not significant for either group of adolescent boys in the present study. Although this finding does not support the hypothesized positive relation between imaginary audience and problem behaviors, it should be noted that empirical evidence exists which indicates no relation between imaginary audience and some types of internalizing problem behaviors (e.g., depression) among nondisordered adolescent boys (Schonert-Reichl, 1994a). Thus, the absence of a significant relation between internalizing problem behavior and imaginary audience in the present study is in accord with previous research examining these constructs in boys without behavioral disorders.

In contrast to teacher reports of problem behaviors, when the self-reports of adolescents with behavioral disorders were considered, the hypothesis that the imaginary audience would be positively related to problem behaviors received some support. For boys with behavioral disorders, a significant and positive relation was

found between imaginary audience ideation and self-reported total problems behaviors. In addition, the relation between imaginary audience and self-reported internalizing problem behaviors was positive and significant. Furthermore, imaginary audience ideation remained a significant independent predictor of self-reported internalizing problem behaviors after statistically controlling for the other social cognitive variables included in the present study (i.e., epistemic reasoning, invulnerability, omnipotence, personal uniqueness) in a simultaneous regression analysis.

With regard to externalizing problem behaviors, when first considering the zero-order correlations, no significant relations emerged between imaginary audience and teacher- and self-reports of externalizing problem behaviors for either group of adolescent boys. However, in a series of simultaneous regression analyses, the relation between imaginary audience and externalizing problem behavior became significant and positive after statistically controlling for epistemic reasoning and dimensions of personal fable. That is, among boys without behavioral disorders, imaginary audience ideation emerged as a significant independent predictor of teacher-reported externalizing problem behaviors. For boys with behavioral disorders, imaginary audience ideation emerged as a significant and positive independent predictor of self-reported externalizing problem behaviors.

Personal fable and problem behaviors. Correlational analyses indicated nonsignificant relations between dimensions of the personal fable and the various types of problem behaviors for both groups of adolescent boys in the present investigation. Nevertheless, when considering the relation between personal fable

and dimensions of problem behaviors via a series of simultaneous regression analyses, some dimensions of the personal fable emerged as significant independent predictors of problem behaviors.

For boys with behavioral disorders, omnipotence emerged as a significant and negative independent predictor of self-reported internalizing problem behaviors. Although this finding is in contrast to the hypothesis that dimensions of adolescent egocentrism would be positively associated with problem behaviors, it is in line with recent research among nondisordered adolescents highlighting the adaptive nature of the omnipotent component of the personal fable (e.g., Lapsley et al., 1996; Schonert-Reichl, 1994a). For example, in a study conducted with 561 adolescents from grades 6, 8, 10, and 12, Lapsley et al. (1996) found a significant and negative relation between omnipotence and internalizing problem behaviors such as depression and suicidal ideation.

For boys without behavioral disorders, regression analyses revealed that, after controlling for the other social cognitive variables in the present study, invulnerability was a marginally significant and negative independent predictor of teacher-reported internalizing problem behaviors. Although it was hypothesized that higher levels of invulnerability would be associated with greater numbers of internalizing problem behaviors, previous research among nondisordered populations has yielded mixed results concerning the specific nature of this association. For example, whereas Lapsley et al. (1996) found a significant and positive association between one type of internalizing problem (i.e., depression) and invulnerability among nondisordered

adolescent boys in their study, Schonert-Reichl (1994a) found no significant relation between these two variables among the adolescent boys in her study.

As anticipated, a simultaneous regression analysis revealed that invulnerability was a marginally significant and positive independent predictor of self-reported externalizing problem behaviors for boys with behavioral disorders. Similar associations between dimensions of the personal fable and externalizing problem behaviors have been found in related research with nondisordered adolescents. For example, externalizing problem behavior (e.g., risk-taking) has been found to be positively associated with increased feelings of invulnerability (e.g., Arnett, 1990; Lapsley et al., 1996).

For boys without behavioral disorders, in a simultaneous regression analysis, omnipotence emerged as a marginally significant and negative independent predictor of teacher-reported externalizing problem behaviors. That is, those boys who believed "I don't think anything will stand in the way of my goals" had lower levels of externalizing problems. This finding is consistent with previous research indicating that personal fable ideation can serve as a protective factor for staving off mental health problems (e.g., Lapsley et al., 1996).

It is noteworthy that, among the boys with behavioral disorders, no significant association was found between problem behaviors and epistemic reasoning or the dimensions of adolescent egocentrism when problem behaviors were reported by teachers, yet significant associations were found when self-reports of problem behaviors were considered. One possible explanation for this difference is that measures of self-report are more likely to correlate with other measures of self-report

than with measures completed by others because of shared variance. Nevertheless, although reliance on self-report methodology with individuals with problem behaviors may be suspect regarding some types of variables (e.g., social competencies; Hymel et al., 1993), self-reports of problem behaviors may be, in fact, a more true indication of problem behaviors than the reports completed by their teachers because the adolescents have a more comprehensive understanding of their behaviors across contexts.

In sum, the relation between social cognitive reasoning and problem behaviors appears to be a complex one. In the present investigation, there emerged some support for the hypothesis that maladjusted behaviors (i.e., internalizing, externalizing, total problems) would be negatively associated with epistemic reasoning and positively associated with imaginary audience and personal fable ideation. The specific nature of the association between social cognition and problem behavior, however, varied by group membership, rating source of problem behaviors, and type of problem behaviors. For example, when teacher-reports were considered, among boys without behavioral disorders, a positive association was found between imaginary audience and externalizing problems, however, no significant associations were found between social cognition and problem behaviors for the boys with behavioral disorders. Yet, when self-reports of the boys with behavioral disorders were considered, a positive association emerged between imaginary audience ideation and both internalizing and externalizing problems. In addition, some associations were in contrast to the direction of the relation hypothesized between the dimensions of social cognition and problem behaviors (e.g., the negative association

between omnipotence and self-reported internalizing problems for boys with behavioral disorders). Finally, for some variables, no significant relations were found.

Strengths and Limitations of This Study

Several methodological strengths exist in this study. First, because the adolescent boys without behavioral disorders were selected in order to approximate the adolescent boys with behavioral disorders on the background variables of age, ethnicity, and SES, several potential confounds were minimized. Second, testing procedures were held constant for both groups of boys, thus insuring that differences between groups were not due to differences in the manner in which testing was conducted. For example, all measures were individually administered and participants were read aloud each of the measures in order to minimize differences between groups that may have been due to reading ability. Third, a high rate of participation across boys in the special education programs was obtained, thus allowing for greater generalizability of findings to other populations of adolescent boys classified as having behavioral disorders. Fourth, as noted in the introductory section of this discussion, a number of strategies were utilized to insure that the group of boys with behavioral disorders truly differed from the group of boys without behavioral disorders with respect to problem behaviors. Fifth, data were collected concerning verbal expressivity (i.e., operationalized in the present study as the number of words spoken) in response to interview questions on the EDI. This was done in order to minimize potential confounds related to both motivation and verbal expression. Finally, because verbal ability has been found to be positively and moderately associated with social cognition (Gregg et al., 1994; Lee & Prentice, 1988; Lenhart & Rabiner, 1995),

in the present study a proxy of verbal ability--receptive vocabulary--was statistically controlled in analyses examining group differences in social cognition.

An obvious limitation of this study is that the results are not generalizable to girls. Unfortunately, much of the research conducted in the area of conduct disorders and antisocial behavior has focused on boys due to the small number of girls identified as having severe problem behaviors (Bussing et al., 1998; Cullinan et al., 1992; McIntyre & Battle, 1998). Another issue of concern, as previously noted, is that the dimensions of peer and family personal-intimacy and group-integration assessed in the present study provided little explanatory power for describing variations in social cognitive reasoning. That is, it appears that these measures did not sufficiently address the components of social relationships important to development in the social cognitive domain. Future studies should use a measure that more adequately captures the dimensions of social relationships that have been implicated in the development of social cognition.

Another limitation of the present investigation is that the correlational nature of these results precludes the ability to make conclusions about the manner in which psychopathology and social cognition are related. For example, in the present study one cannot make the case that having behavioral disorders causes one to experience delays in epistemic reasoning. It may be in fact that a delay in epistemic reasoning causes one to display immature behaviors in school settings, thus leading to a diagnosis of behavioral disorder. It is also possible that a third variable is responsible for the relation between problem behaviors and deficits in epistemic reasoning.

Finally, because no age-related changes were found, no firm conclusions can be made regarding whether the nature of the epistemic reasoning of adolescents with behavioral disorders is a delay or a deficit. In order to determine whether adolescents with behavioral disorders experience delays or deficits in epistemic reasoning, a longitudinal study examining epistemic reasoning among individuals with behavioral disorders from early adolescence to young adulthood would shed light on this phenomenon.

Implications for Further Research

Adolescent boys with behavioral disorders are an important group with which to conduct investigations examining social cognitive reasoning, yet little research has been conducted in this area with this population. The present findings indicate that adolescent boys with behavioral disorders reason from lower epistemic stances than their peers without behavioral disorders. However, although social relationships were suggested as a possible mechanism for development in the social cognitive domain, the present findings failed to provide any support for an association between the social cognitive domain on which the groups differed (i.e., epistemic reasoning) and social relationships. Thus, what will be important to determine in future research is the specific role that social relationships play in promoting social cognitive development among adolescents with behavioral disorders. Additionally, future investigations should address the criteria used by adolescents to rate their perceptions of social relationships with peers and families in order to gain a clearer picture of the relation between social cognitive development and social relationships among adolescents with behavioral disorders.

References

- Achenbach, T. M. (1991a). Manual for the teacher's report form and 1991 profile. Burlington, VT: University of Vermont Department of Psychiatry.
- Achenbach, T. M. (1991b). Manual for the youth self-report and 1991 profile. Burlington, VT: University of Vermont Department of Psychiatry.
- Adams, G. R., Shea, J. A., & Fitch, S. A. (1979). Toward the development of an objective assessment of ego-identity status. Journal of Youth and Adolescence, *2*, 223-237.
- Arnett, J. (1990). Drunk driving, sensation seeking, and egocentrism among adolescents. Personality and Individual Differences, *11*, 541-546.
- Arnett, J. (1992). Reckless behavior in adolescence: A developmental perspective. Developmental Review, *12*, 339-373.
- Asher, S. R., Renshaw, P. D., & Geraci, R. L. (1980). Children's friendships and social competence. International Journal of Psycholinguistics, *7*, 27-39.
- Baron, P. (1986). Egocentrism and depressive symptomatology in adolescents. Journal of Adolescent Research, *1*, 431-437.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. E., & Erbaugh, J. K. (1961). An inventory for measuring depression. Archives of General Psychiatry, *4*, 561-571.
- Berndt, T. J., & Hoyle, S. G. (1985). Stability and change in childhood and adolescent friendships. Developmental Psychology, *21*, 1007-1015.
- Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. Psychological Bulletin, *88*, 1-45.
- Blyth, D. A., Hill, J. P., & Thiel, K. S. (1982). Early adolescents' significant others: Grade and gender differences in perceived relationships with familial and nonfamilial adults and young people. Journal of Youth and Adolescence, *11*, 425-450.
- Boyes, M. C. (1987). Epistemic development and identity formation. Unpublished doctoral dissertation, University of British Columbia, Vancouver.
- Boyes, M. C., & Chandler, M. (1992). Cognitive development, epistemic doubt, and identity formation in adolescence. Journal of Youth and Adolescence, *21*, 277-304.

Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. Child Development, 61, 1101-1111.

Bukowski, W. M., Hoza, B., & Boivin, M. (1993). Popularity, friendship, and emotional adjustment during early adolescence. In B. Laursen (Ed.), Close friendships in adolescence (pp. 23-54). San Francisco, CA: Jossey-Bass.

Bussing, R., Zima, B. T., Belin, T. R., & Forness, S. R. (1998). Children who qualify for LD and SED programs: Do they differ in level of ADHD symptoms and comorbid psychiatric conditions? Behavioral Disorders, 23, 85-97.

Chandler, M. J. (1973). Egocentrism and antisocial behavior: The assessment and training of social perspective-taking skills. Developmental Psychology, 9, 326-332.

Chandler, M. J. (1975). Relativism and the problem of epistemological loneliness. Human Development, 18, 171-180.

Chandler, M. (1982). Social cognition and environmental structure: A critique of assimilation-side developmental psychology. Canadian Journal of Behavioral Sciences, 14, 290-306.

Chandler, M. (1987). The Othello effect. Essay on the emergence and eclipse of skeptical doubt. Human Development, 30, 137-159.

Chandler, M., & Boyes, M. (1982). Social cognitive development. In B. B. Wolman (Ed.), Handbook of developmental psychology (pp. 387-402). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Chandler, M., Boyes, M., & Ball, L. (1990). Relativism and stations of epistemic doubt. Journal of Experimental Child Psychology, 50, 370-395.

Chandler, M. J., Greenspan, S., & Barenboim, C. (1974). Assessment and training of role taking and referential communication skills in institutionalized emotionally disturbed children. Developmental Psychology, 10, 546-553.

Chandler, M., & Moran, T. (1990). Psychopathy and moral development: A comparative study of delinquent and nondelinquent youth. Development and Psychopathology, 2, 227-246.

Cicchetti, D. (1989). Developmental psychopathology: Some thoughts on its evolution. Development and Psychopathology, 1, 1-4.

Cicchetti, D. (1993). Developmental psychopathology: Reactions, reflections, projections. Developmental Review, 13, 471-502.

Cicchetti, D., & Cohen, D. J. (1995). Perspectives on developmental psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), Developmental psychopathology: Vol. 1. Theory and methods (pp. 3-20). New York: John Wiley & Sons.

Cicchetti, D., & Toth, S. L. (1998). The development of depression in children and adolescents. American Psychologist, 53, 221-241.

Claes, M. (1992). Friendship and personal adjustment in adolescence. Journal of Adolescence, 15, 39-55.

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. Developmental Psychology, 32, 988-998.

Cohen, J. (1969). Statistical power analysis for the behavioral sciences. New York: Academic Press.

Coie, J. D., & Dodge, K. A. (1997). Aggression and antisocial behavior. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), Handbook of child psychology: Vol. 3. Social, emotional, and personality development (5th ed., pp. 779-862). New York: John Wiley & Sons.

Coie, J. D., & Kupersmidt, J. B. (1983). A behavioral analysis of emerging social status in boys' groups. Child Development, 54, 1400-1416.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. Psychological Bulletin, 115, 74-101.

Cullinan, D., Epstein, M. H., & Sabornie, E. J. (1992). Selected characteristics of a national sample of seriously emotionally disturbed adolescents. Behavioral Disorders, 17, 273-280.

Cvetkovich, G., Grote, B., Bjorseth, A., & Sarkissian, J. (1975). On the psychology of adolescents' use of contraceptives. The Journal of Sex Research, 11, 256-270.

Davis, M. H., & Franzoi, S. L. (1991). Stability and change in adolescent self-consciousness and empathy. Journal of Research in Personality, 25, 70-87.

Demorest, A. P. (1992). The role of social cognition in children's social maladjustment. Social Cognition, 10, 211-233.

Dishion, T. J. (1990). Peer context of troublesome behavior in children and adolescents. In P. Leone (Ed.), Understanding troubled and troublesome youth (pp. 128-153). Beverly Hills, CA: Sage.

Dishion, T. J., Andrews, D. W., & Crosby, L. (1995). Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. Child Development, *66*, 139-151.

Dodge, K. A. (1983). Behavioral antecedents of peer social status. Child Development, *54*, 1386-1399.

Dodge, K. A., & Richard, B. A. (1985). Peer perceptions, aggression, and the development of peer relations. In J. B. Pryor & J. D. Day (Eds.), The development of social cognition (pp. 35-58). New York: Springer-Verlag.

Dodge, K. A., & Schwartz, D. (1997). Social information processing mechanisms in aggressive behavior. In D. M. Stoff & J. Breiling (Eds.), Handbook of antisocial behavior (pp.171-180). New York: John Wiley & Sons.

Downey, G., & Walker, E. (1989). Social cognition and adjustment in children at risk for psychopathology. Developmental Psychology, *25*, 835-845.

Dunn, L. M., & Dunn, L. M. (1981). Peabody Picture Vocabulary Test-Revised: Manual for forms L and M. Circle Pines, MN: American Guidance Service.

East, P. L., Hess, L. E., & Lerner, R. M. (1987). Peer social support and adjustment of early adolescent peer groups. Journal of Early Adolescence, *7*, 153-163.

Elkind, D. (1967). Egocentrism in adolescence. Child Development, *38*, 1025-1034.

Elkind, D. (1978). Understanding the young adolescent. Adolescence, *13*, 127-134.

Elkind, D. (1985a). Cognitive development and adolescent disabilities. Journal of Adolescent Health Care, *6*, 84-89.

Elkind, D. (1985b). Egocentrism redux. Developmental Review, *5*, 218-226.

Elkind, D., & Bowen, R. (1979). Imaginary audience behavior in children and adolescents. Developmental Psychology, *15*, 38-44.

Ellis, P. L. (1982). Empathy: A factor in antisocial behavior. Journal of Abnormal Child Psychology, 10, 123-134.

Enright, R. D., Shukla, D. G., & Lapsley, D. K. (1980). Adolescent egocentrism-sociocentrism and self-consciousness. Journal of Youth and Adolescence, 9, 101-116.

Farmer, T. W. (1994). Social networks and the social behavior of youth with emotional and behavioral disorders: Implications for intervention. B. C. Journal of Special Education, 18, 223-234.

Farmer, T. W., & Cairns, R. B. (1991). Social networks and social status in emotionally disturbed children. Behavioral Disorders, 16, 288-298.

Farmer, T. W., & Hollowell, J. H. (1994). Social networks in mainstream classrooms: Social affiliations and behavioral characteristics of students with emotional and behavioral disorders. Journal of Emotional and Behavioral Disorders, 2, 143-155, 163.

Farmer, T. W., Stuart, C. B., Lorch, N. H., & Fields, E. (1993). The social behavior and peer relations of children with emotional and behavioral disorders in residential treatment: A pilot study. Journal of Emotional and Behavioral Disorders, 1, 223-234.

Flavell, J. H., & Miller, P. H. (1998). Social cognition. In W. Damon (Series Ed.) & D. Kuhn & R. S. Siegler (Vol. Eds.), Handbook of child psychology: Vol. 4. Cognition, perception, and language (5th ed., pp. 851-898). New York: John Wiley & Sons.

Ford, M. (1982). Social cognition and social competence in adolescence. Developmental Psychology, 18, 323-340.

Frey, C. U., & Röthlisberger, C. (1996). Social support in healthy adolescents. Journal of Youth and Adolescence, 25, 17-31.

Garber, J., Weiss, B., & Shanley, N. (1993). Cognitions, depressive symptoms, and development in adolescents. Journal of Abnormal Psychology, 102, 47-57.

Gibbs, J. (1987). Social processes in delinquency: The need to facilitate empathy as well as sociomoral reasoning. In W. M. Kurtines & J. L. Gewirtz (Eds.), Moral development through social interaction (pp. 301-321). New York: John Wiley & Sons.

Goossens, L. (1984). Imaginary audience behavior as a function of age, sex, and formal operational thinking. International Journal of Behavioral Development, 7, 77-93.

Goossens, L., Seiffge-Krenke, I., & Marcoen, A. (1992). The many faces of adolescent egocentrism: Two European replications. Journal of Adolescent Research, 7, 43-58.

Gray, W. M., & Hudson, L. M. (1984). Formal operations and the imaginary audience. Developmental Psychology, 20, 619-627.

Gregg, V., Gibbs, J. C., & Basinger, K. S. (1994). Patterns of developmental delay in moral judgment by male and female delinquents. Merrill Palmer Quarterly, 40, 538-553.

Hartup, W. W. (1986). On relationships and development. In W. W. Hartup & Z. Rubin (Eds.), Relationships and development (pp. 1-26). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hauser, R. M., & Warren, J. R. (1997). Socioeconomic indexes for occupations: A review, update, and critique. In A. E. Raftery (Vol. Ed.), Sociological methodology: Vol. 27 (pp. 177-298). American Sociological Association.

Hayden L. K. (1989). The development of the Relational Provision Loneliness Questionnaire for children. Unpublished doctoral dissertation, University of Waterloo, Waterloo.

Henggeler, S. W. (1982). The family-ecological systems theory. In S. W. Henggeler (Ed.), Delinquency and adolescent psychopathology (pp. 1-10). Boston, MA: John Wright.

Hinshaw, S. P., & Melnick, S. M. (1995). Peer relationships in boys with attention-deficit hyperactivity disorder with and without comorbid aggression. Development and Psychopathology, 7, 627-647.

Holmbeck, G. N., Crossman, R. E., Wandrei, M. L., & Gasiewski, E. (1994). Cognitive development, egocentrism, self-esteem, and adolescent contraceptive knowledge, attitudes, and behavior. Journal of Youth and Adolescence, 23, 169-193.

Hudgins, W., & Prentice, W. M. (1973). Moral judgment in delinquent and nondelinquent adolescents and their mothers. Journal of Abnormal Psychology, 82, 145-152.

Hymel, S., Bowker, A., & Woody, E. (1993). Aggressive versus withdrawn unpopular children: Variations in peer and self-perceptions in multiple domains. Child Development, *64*, 879-896.

Inhelder, B., & Piaget, J. (1958). The growth of logical thinking from childhood through adolescence. New York: Basic Books.

Irwin, C. E., & Millstein, S. G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence. Journal of Adolescent Health Care, *7*, 82-96.

Jahnke, H. C., & Blanchard-Fields, F. (1993). A test of two models of adolescent egocentrism. Journal of Youth and Adolescence, *22*, 313-326.

Kaplan, P. J., & Arbutnot, J. (1985). Affective empathy and cognitive role-taking in delinquent and nondelinquent youth. Adolescence, *20*, 323-333.

Kauffman, J. M. (1997). Characteristics of emotional and behavioral disorders of children and youth (6th ed.). Columbus, Ohio: Merrill.

Kendall, P., Deardorff, P., & Finch, A. (1977). Empathy and socialization in first and repeat juvenile offenders and normals. Journal of Abnormal Child Psychology, *5*, 93-97.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Lickona (Ed.), Moral and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston.

Kohlberg, L. (1978). The cognitive developmental approach to behavior disorders: A study of the development of moral reasoning in delinquents. In G. Serban (Ed.), Cognitive defects in the development of mental illness (pp. 207-219). New York: Bruner Marel.

Kortering, L. J., & Blackorby, J. (1992). High school dropout and students identified with behavioral disorders. Behavioral Disorders, *18*, 24-32.

Kovacs, M., & Beck, A. T. (1977). An empirical-clinical approach toward definition of childhood depression. In J. G. Schulterbrandt & A. Raskin (Eds.), Depression in childhood: Diagnosis, treatment, and conceptual models (pp. 1-25). New York: Raven Press.

Kruger, A. C. (1992). The effect of peer and adult-child transactive discussions on moral reasoning. Merrill-Palmer Quarterly, *38*, 191-211.

Lapsley, D. K. (1985). Elkind on egocentrism. Developmental Review, *5*, 227-236.

Lapsley, D. K. (1990). Continuity and discontinuity in adolescent social cognitive development. In R. Montemayor, G. R. Adams, & T. P. Gullota (Eds.), From childhood to adolescence: A transitional period? (pp. 183-204). Newbury Park, CA: Sage Publications.

Lapsley, D. K. (1993). Toward an integrated theory of adolescent ego development: The "new look" at adolescent egocentrism. American Journal of Orthopsychiatry, 63, 562-571.

Lapsley, D. K., FitzGerald, D. P., Rice, K. G., & Jackson, S. (1989). Separation-individuation and the "new look" at the imaginary audience and personal fable: A test of an integrative model. Journal of Adolescent Research, 4, 483-505.

Lapsley, D. K., Flannery, D. J., Gottschlich, H., & Raney, M. (1996, March). Sources of risk and resilience in adolescent mental health. Poster session presented at the sixth biennial meeting of the Society for Research on Adolescence, Boston, MA.

Lapsley, D. K., Jackson, S., Rice, K., & Shadid, G. E. (1988). Self-monitoring and the "new look" at the imaginary audience and personal fable: An ego-developmental analysis. Journal of Adolescent Research, 3, 17-31.

Lapsley, D. K., Milstead, M., Quintana, S. M., Flannery, D., & Buss, R. R. (1986). Adolescent egocentrism and formal operations: Tests of a theoretical assumption. Developmental Psychology, 22, 800-807.

Lapsley, D. K., & Murphy, M. (1985). Another look at the theoretical assumptions of adolescent egocentrism. Developmental Review, 5, 201-217.

Larson, R. W. (1983). Adolescents' daily experience with family and friends: Contrasting opportunity systems. Journal of Marriage and the Family, 45, 739-750.

Leadbeater, B. J., Hellner, I., Allen, J. P., & Arber, J. L. (1989). The assessment of interpersonal negotiation strategies in multi-problem youth. Developmental Psychology, 25, 465-472.

Lee, M., & Prentice, N. M. (1988). Interrelations of empathy, cognition, and moral reasoning with dimensions of juvenile delinquency. Journal of Abnormal Child Psychology, 16, 127-139.

Lenhart, L. A., & Rabiner, D. L. (1995). An integrative approach to the study of social competence in adolescence. Development and Psychopathology, 7, 543-561.

Levine, J. B., Green, C. J., & Millon, T. (1986). The separation-individuation test of adolescence. Journal of Personality Assessment, 50, 123-137.

Lochman, J. E., & Dodge, K. A. (1994). Social-cognitive processes of severely violent, moderately aggressive, and nonaggressive boys. Journal of Consulting and Clinical Psychology, 62, 366-374.

Lochman, J. E., & Dodge, K. A. (1998). Distorted perceptions in dyadic interactions of aggressive and nonaggressive boys: Effects of prior expectations, context, and boys' age. Development and Psychopathology, 10, 495-512.

Marcoen, A., & Brumagne, M. (1985). Loneliness among children and young adolescents. Developmental Psychology, 21, 1025-1031.

Marcus, R. F., & Betzer, P. D. (1996). Attachment and antisocial behavior in early adolescence. Journal of Early Adolescence, 16, 229-248.

McColgan, E. B., Rest, J. R., & Pruitt, D. B. (1983). Moral judgment and antisocial behavior in early adolescence. Journal of Applied Developmental Psychology, 4, 189-199.

McIntyre, T. (1993). Behaviorally disordered youth in correctional settings: Prevalence, programming, and teacher training. Behavioral Disorders, 18, 167-176.

McIntyre, T., & Battle, J. (1998). The traits of good teachers as identified by African-American and White students with emotional and/or behavioral disorders. Behavioral Disorders, 23, 134-142.

Meadows, N. B., Neel, R. S., Scott, C. M., & Parker, G. (1994). Academic performance, social competence, and mainstream accommodations: A look at mainstreamed and nonmainstreamed students with serious behavioral disorders. Behavioral Disorders, 19, 170-180.

Noam, G. G., Chandler, M., & LaLonde, C. (1995). Clinical-developmental psychology: Constructivism and social cognition in the study of psychological dysfunctions. In D. Cicchetti & D. J. Cohen (Eds.), Developmental psychopathology: Vol. 2. Risk, disorder, and adaptation (pp. 424-464). New York: John Wiley & Sons.

O'Connor, B. P., & Nikolic, J. (1990). Identity development and formal operations as sources of adolescent egocentrism. Journal of Youth and Adolescence, 19, 149-158.

Panella, D., & Henggeler, S. W. (1986). Peer interactions of conduct-disordered, anxious-withdrawn, and well-adjusted black adolescents. Journal of Abnormal Child Psychology, 14, 1-11.

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low accepted children at risk? Psychological Bulletin, 102, 358-389.

Parker, J. G., Rubin, K. H., Price, J. M., & DeRosier, M. E. (1995). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti & T. Cohen (Eds.), Developmental psychopathology: Vol. 1. Risk, disorder, and adaption (pp. 96-161). New York: John Wiley & Sons.

Patterson, G. R. (1986). Performance models for antisocial boys. American Psychologist, 41, 432-444.

Paterson, J., Pryor, J., & Field, J. (1995). Adolescent attachment to parents and friends in relation to aspects of self-esteem. Journal of Youth and Adolescence, 24, 365-376.

Pellegrini, D. S. (1985). Social cognition and competence in middle childhood. Child Development, 56, 253-264.

Piaget, J. (1962). Comments on Vygotsky's critical remarks concerning "The language and thought of the child" and judgment and reasoning in the child. Cambridge, MA: M. I. T. Press.

Ritter, D. R. (1989). Teachers' perceptions of problem behavior in general and special education. Exceptional Children, 55, 559-564.

Rubin, K. H., Bukowski, W., & Parker, J. G. (1997). Peer interactions, relationships, and groups. In W. Damon (Ed.), Handbook of child psychology: Vol. 3. Social, emotional, and personality development (5th ed., pp. 619-700). New York: John Wiley & Sons.

Rules and regulations for special education programs, Washington. Ch. 28A.155, 95-21-055 (Order 95-11) § 392-172-118 (1995).

Sabornie, E. J. (1987). Bi-directional social status of behaviorally disordered and nonhandicapped elementary school pupils. Behavioral Disorders, 12, 45-57.

Sabornie, E. J., & Kauffman, J. M. (1985). Regular classroom sociometric status of behaviorally disordered students. Behavioral Disorders, 10, 268-274.

Savin-Williams, R. C., & Berndt, T. J. (1990). Friendship and peer relations. In S. S. Felman & G. R. Elliott (Eds.), At the threshold: The developing adolescent (pp. 277-315). Cambridge, MA: Harvard University Press.

Schonert, K. A., & Cantor, G. N. (1991). Moral reasoning in behaviorally disordered adolescents from alternative and traditional high schools. Behavioral Disorders, 17, 23-35.

Schonert-Reichl, K. A. (1993). Empathy and social relationships in adolescents with behavioral disorders. Behavioral Disorders, 18, 189-204.

Schonert-Reichl, K. A. (1994a). Gender differences in depressive symptomatology and egocentrism in adolescence. Journal of Early Adolescence, 14, 49-65.

Schonert-Reichl, K. A. (1994b). The interrelations of moral reasoning, empathy, and age among adolescents with behavioural disorders. B. C. Journal of Special Education, 18, 248-262.

Schonert-Reichl, K. A. (1995). The friendships and peer relations of adolescents with behavioral problems. Exceptionality Education Canada, 5, 55-80.

Selman, R. L. (1976). Social-cognitive understanding: A guide to educational and clinical practice. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues (pp. 299-316). New York: Holt, Rinehart and Winston.

Selman, R. L. (1980). The growth of interpersonal understanding: Developmental and clinical analysis. New York: Academic.

Shantz, C. U. (1983). Social cognition. In P. H. Mussen (Ed.), Handbook of child psychology (pp. 495-555). New York: John Wiley & Sons.

Sigman, M., Ungerer, J. A., & Russell, A. (1983). Moral judgment in relation to behavioral and cognitive disorders in adolescents. Journal of Abnormal Child Psychology, 1, 91-103.

Smetana, J. G. (1990). Morality and conduct disorders. In M. Lewis & S. M. Miller (Eds.), Handbook of developmental psychopathology. Perspectives in developmental psychology (pp. 157-179). New York: Plenum Press.

Sroufe, L. A. (1990). Considering normal and abnormal together: The essence of developmental psychopathology. Development and Psychopathology, 2, 335-347.

Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationship. In S. S. Feldman & G. R. Elliott (Eds.), At the threshold: The developing adolescent (pp. 255-276). Cambridge, MA: Harvard University Press.

Tabachnick, B. G., & Fidell, L. S. (1989). Using multivariate statistics (2nd ed.). New York: Harper Collins Publishers, Inc.

Trevethan, S. D., & Walker, L. J. (1989). Hypothetical versus real-life moral reasoning among psychopathic and delinquent youth. Development and Psychopathology, 1, 91-103.

Vacc, N. A. (1968). A study of behavior disordered children in regular and special classes. Exceptional Children, 35, 197-204.

Vacc, N. A. (1972). Long term effects of special class intervention for behavior disordered children. Exceptional Children, 39, 15-22.

Vartanian, L. R., & Powlishta, K. K. (1996). A longitudinal examination of the social-cognitive foundations of adolescent egocentrism. Journal of Early Adolescence, 16, 157-178.

Vernberg, E. M. (1990). Psychological adjustment and experiences with peers during early adolescence: Reciprocal, incidental, or unidirectional relationships? Journal of Abnormal Child Psychology, 18, 187-198.

Walker, L. J. (1983). Sources of cognitive conflict for stage transition in moral development. Developmental Psychology, 19, 103-110.

Walker, L. J., & Taylor, J. H. (1991). Family interactions and the development of moral reasoning. Child Development, 62, 264-283.

Waterman, J. M., Sobesky, W. E., Silvern, L., Aoki, B. & McCaulay, M. (1981). Social perspective-taking and adjustment in emotionally disturbed, learning-disabled, and normal children. Journal of Abnormal Child Psychology, 9, 133-148.

Yeates, K. O., & Selman, R. L. (1989). Social competence in the school: Toward an integrative developmental model for intervention. Developmental Review, 9, 64-100.

Youniss, J. (1987). Social construction and moral development: Update and expansion of an idea. In W. M. Kurtines & J. L. Gewirtz (Eds.), Moral development through social interaction (pp. 131-149). New York: John Wiley and Sons.

Appendix A
Description of the Study: Adolescents With Behavioral Disorders

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

Dear Student:

You have been selected to be a participant in a research project that we are conducting in your school entitled "Understanding Reasoning in Adolescence". Needless to say, we would be extremely pleased if you decide to participate. This research will be conducted as partial fulfillment of Kathleen Beaudoin's doctoral degree and therefore we greatly appreciate your assistance. The purpose of this study is to examine how adolescents' reason about social matters. It is not a test and there are **no right or wrong answers--just your answers**. As you may be well aware, how adolescents reason about social issues is extremely important, and yet very little research about teenagers' reasoning has been conducted. It is hoped that the results from this study will help teachers and parents better understand how adolescents think about important matters and improve education for all. Listed below are several aspects of this project that you need to know.

If you decide to participate in this study, you will be asked to complete a measure of vocabulary, three sets of questionnaires, and an interview in an individual session during school hours. One set of questions asks about your perceptions of yourself and school. The second set of questions asks about your opinions about how true statements are about yourself. The third set of questions asks about your relationships with peers and family. During the interview you will be asked questions about how you think about social dilemmas. The interview will be audiotaped so that your answers can be transcribed later. The study will take approximately one hour to complete. You will not be asked to put your name on any of the questionnaires and your name will **NOT** be kept with your answers so that no one besides the researchers will know who answered the questions. **All of your answers will be completely confidential.** Teachers, parents, or other school personnel will not be able to see your answers.

In order for you to participate in the study, you need to take home the attached permission slip and give it to your parents so that they may sign it. **If you return your permission slip, you will have a chance of winning a \$15.00 gift certificate from Tower Records.** Please return it to your teacher **TOMORROW**. Thank you for considering this request.

Sincerely,

Kathleen Beaudoin

Kathleen Beaudoin

Ph.D. Candidate

Kim Schonert-Reichl

Dr. Kimberly Schonert-Reichl

Associate Professor

Appendix B
Parent Consent Forms: Adolescents With Behavioral Disorders

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

Dear Parent or Guardian:

We are writing to request your permission for your son to participate in a research project that we are conducting in his school entitled "Understanding Reasoning in Adolescence". The purpose of this study is to examine how adolescents reason about social matters. It is hoped that the results of this study will help parents and educators better understand students and therefore be better equipped to design appropriate educational interventions and improve education for all. Listed below are several aspects of this project that you need to know.

Students will be asked to complete a measure of vocabulary, three sets of questionnaires, and an interview during one individually administered session. One set of questions asks about the adolescent's perceptions of himself and school. The second set of questions asks about the adolescent's feelings about himself. The third set of questions asks about the adolescent's perceptions of current relationships. Interview questions ask about adolescents' perceptions about certain social issues. The interview will be audiotaped so that answers can be transcribed later. The study will take approximately one hour to complete. Students will participate during regular classroom hours with teacher consent. Your son will not be asked to participate during class time when tests or major assignments are occurring. Participation in the study is entirely voluntary and your son may withdraw from the study at anytime without penalty. Withdrawal from the research study or refusal to participate will not jeopardize class standing in any way. All information collected will be strictly confidential and will not be available to students' teachers, parents or other school personnel. Students' names will not be placed on the answer sheets to insure anonymity.

Needless to say, we would be extremely pleased if your son does decide to participate and, if you are willing, to give him permission to do so. This research will be conducted as partial fulfillment of Kathleen Beaudoin's doctoral degree and therefore we greatly appreciate your assistance. If you have any questions and wish to further discuss this project, feel free to call Kathleen Beaudoin at (206)296-2678 or Kimberly Schonert-Reichl at (604)822-5152. Please keep a copy of this request and all attachments for your records. We would appreciate it if you would indicate on the slip provided on the attached page whether or not your son has permission to participate. Would you then kindly sign and date the slip and have you son return it to school as soon as possible. Students who return their permission slips (regardless if they are given permission to participate) will have a chance to win a \$15.00 gift certificate for Tower Records. Thank you very much for considering this request.

Sincerely,
Kathleen Beaudoin
Kathleen Beaudoin
Ph.D. Candidate

Kimberly Schonert-Reichl
Kimberly Schonert-Reichl
Associate Professor

PARENT CONSENT FORM

Study Title: "Understanding Reasoning in Adolescence"

Researchers: Kathleen Beaudoin
Ph.D. Candidate
Department of Educational Psychology and Special Education
University of British Columbia
2125 Main Mall
Vancouver, BC V6T1Z4
Dr. Kimberly Schonert-Reichl
Associate Professor

If you have any concerns about your treatment or rights as a research subject please contact the Director of Research Services at the University of British Columbia, Dr. Richard Spratley at (604)822-8598.

(KEEP THIS PORTION FOR YOUR RECORDS)

I have read and understand the attached letter regarding the study entitled "Understanding Reasoning in Adolescence". I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, my son has my permission

_____ No, my son does not have my permission to participate.

Parent's Signature _____
Son's Name _____
Date _____

(DETACH HERE AND RETURN TO SCHOOL)

I have read and understand the attached letter regarding the study entitled "Understanding Reasoning in Adolescence". I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, my son has my permission

_____ No, my son does not have my permission to participate.

Parent's Signature _____
Son's Name _____
Date _____

Appendix C
Description of the Study: Adolescents Without Behavioral Disorders

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

Dear Student:

You have been selected to be a participant in a research project that we are conducting in your school entitled "**Understanding Reasoning in Adolescence**". Needless to say, we would be extremely pleased if you decide to participate. This research will be conducted as partial fulfillment of Kathleen Beaudoin's doctoral degree and therefore we greatly appreciate your assistance. The purpose of this study is to examine how adolescents' reason about social matters. It is not a test and there are no right or wrong answers--just your answers. As you may be well aware, how adolescents reason about social issues is extremely important, and yet very little research about teenagers' reasoning has been conducted. It is hoped that the results from this study will help teachers and parents better understand how adolescents think about important matters and improve education for all. Listed below are several aspects of this project that you need to know.

If you decide to participate in this study, you will be asked to complete a measure of vocabulary, two sets of questionnaires, and an interview in an individual session during school hours. One set of questions asks about your opinions about how true statements are about yourself. The second set of questions asks about your relationships with peers and family. During the interview you will be asked questions about how you think about social dilemmas. The interview will be audiotaped so that your answers can be transcribed later. The study will take approximately 45 minutes to complete. You will not be asked to put your name on any of the questionnaires and your name will NOT be kept with your answers so that no one besides ourselves will know who answered the questions. All of your answers will be completely confidential. Teachers, parents, or other school personnel will not be able to see your answers.

In order for you to participate in the study, you need to take home the attached permission slip and give it to your parents so that they may sign it. If you return your permission slip, you will have a chance of winning a \$15.00 gift certificate from Tower Records. Please return it to your teacher TOMORROW. Thank you for considering this request.

Sincerely,

Kathleen Beaudoin

Kathleen Beaudoin

Ph.D. Candidate

Kim Schonert-Reichl

Dr. Kimberly Schonert-Reichl

Associate Professor

Appendix D
Parent Consent Forms: Adolescents Without Behavioral Disorders

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

Dear Parent or Guardian:

We are writing to request your permission for your son to participate in a research project that we are conducting in his school entitled "Understanding Reasoning in Adolescence". The purpose of this study is to examine how adolescents reason about social matters. It is hoped that the results of this study will help parents and educators better understand students and therefore be better equipped to design appropriate educational interventions and improve education for all. Listed below are several aspects of this project that you need to know.

Students will be asked to complete a measure of vocabulary, two sets of questionnaires, and an interview during one individually administered session. One set of questions asks about the adolescent's feelings about himself. The second set of questions asks about the adolescent's perceptions of current relationships. Interview questions ask about adolescents' perceptions about certain social issues. The interview will be audiotaped so that answers can be transcribed later. The study will take approximately 45 minutes to complete. Students will participate during regular classroom hours with teacher consent. Your son will not be asked to participate during class time when tests or major assignments are occurring. Participation in the study is entirely voluntary and your son may withdraw from the study at anytime without penalty. Withdrawal from the research study or refusal to participate will not jeopardize class standing in any way. All information collected will be **strictly confidential** and will not be available to students' teachers, parents or other school personnel. Students' names will not be placed on the answer sheets to insure anonymity.

Needless to say, we would be extremely pleased if your son does decide to participate and, if you are willing, to give him permission to do so. This research will be conducted as partial fulfillment of Kathleen Beaudoin's doctoral degree and therefore we greatly appreciate your assistance. If you have any questions and wish to further discuss this project, feel free to call Kathleen Beaudoin at (206)296-2678 or Kimberly Schonert-Reichl at (604)822-5152. Please keep a copy of this request and all attachments for your records. We would appreciate it if you would indicate on the slip provided on the attached page whether or not your son has permission to participate. Would you then kindly sign and date the slip and have your son return it to school as soon as possible. Students who return their permission slips (regardless if they are given permission to participate) will have a chance to win a \$15.00 gift certificate for Tower Records. Thank you very much for considering this request.

Sincerely,
Kathleen Beaudoin
Kathleen Beaudoin
Ph.D. Candidate

Kim Schonert-Reichl
Kimberly Schonert-Reichl
Associate Professor

PARENT CONSENT FORM

Study Title: "Understanding Reasoning in Adolescence"

Researchers: Kathleen Beaudoin

Ph.D. Candidate

Department of Educational Psychology and Special Education

University of British Columbia

2125 Main Mall

Vancouver, BC V6T1Z4

Dr. Kimberly Schonert-Reichl

Associate Professor

If you have any concerns about your treatment or rights as a research subject please contact the Director of Research Services at the University of British Columbia, Dr. Richard Spratley at (604)822-8598.

(KEEP THIS PORTION FOR YOUR RECORDS)

I have read and understand the attached letter regarding the study entitled "Understanding Reasoning in Adolescence". I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, my son has my permission

_____ No, my son does not have my permission to participate.

Parent's Signature _____

Son's Name _____

Date _____

(DETACH HERE AND RETURN TO SCHOOL)

I have read and understand the attached letter regarding the study entitled "Understanding Reasoning in Adolescence". I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, my son has my permission

_____ No, my son does not have my permission to participate.

Parent's Signature _____

Son's Name _____

Date _____

Appendix E
Student Informed Consent Letter
Copy 1 for Adolescents With Behavioral Disorders
Copy 2 for Adolescents Without Behavioral Disorders

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
Faculty of Education
2125 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-8229
Fax: (604) 822-3302

STUDENT CONSENT FORM

The purpose of this form is to give you the information you need in order to decide whether or not you want to participate in this research study which is entitled: "Understanding Reasoning in Adolescence". You may choose not to participate in this study now or at any point during the study and there will be absolutely no penalty for withdrawing. If you choose not to participate, that choice will not in any way jeopardize your grades.

The purpose of this study is to examine how adolescents' reason about social issues. If you participate in this study, you will be asked to complete a measure of vocabulary, three sets of questionnaires, and an interview in an individual session during school hours. One set of questions asks about your perceptions of yourself and school. The second set of questions asks about your opinions about how true statements are about yourself. The third set of questions asks about your relationships with peers and family. The interview questions ask about how you think about social dilemmas. The interview will be audiotaped so that your answers can be transcribed later. The entire study will take approximately one hour to complete. **THIS IS NOT A TEST.** There are no right or wrong answers -- just your answers. Please answer all questions if you can. If you do not want to answer a question, you do not have to.

You will not be asked to put your name on any of the questionnaires and your name will **NOT** be kept with your answers so no one will know who answered the questions. Remember, no one at school or in your community (not even your parents) will ever see your answers, so please answer honestly and quickly. Your first answers are usually your best.

We will be happy to answer any questions you have before signing or later. You may call Kathleen Beaudoin at 296-2678 or Kim Schonert-Reichl at (604)822-5152 if you have any questions after the study has ended. At that time you will also have the option of reviewing your audiotape if you wish. Additionally, if you have any concerns about your treatment or rights as a research participant please contact the Director of Research Services at the University of British Columbia, Dr. Richard Spratley at (604)822-8598.

If you wish to participate in this study, please acknowledge that you have read this form and had any questions answered by signing below. Also keep a copy of this consent form for your records. Thank you for your help.

(DETACH HERE AND RETURN)

Date

Name (Please print)

Signature

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational Psychology
and Special Education
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Tel: (604) 822-8229
Fax: (604) 822-3302

STUDENT CONSENT FORM

The purpose of this form is to give you the information you need in order to decide whether or not you want to participate in this research study which is entitled: **“Understanding Reasoning in Adolescence”**. You may choose not to participate in this study now or at any point during the study and there will be absolutely no penalty for withdrawing. If you choose not to participate, that choice will not in any way jeopardize your grades.

The purpose of this study is to examine how adolescents' reason about social issues. If you participate in this study, you will be asked to complete a measure of vocabulary, two sets of questionnaires, and an interview in an individual session during school hours. One set of questions asks about your opinions about how true statements are about yourself. The second set of questions asks about your relationships with peers and family. The interview questions ask about how you think about social dilemmas. The interview will be audiotaped so that your answers can be transcribed later. The entire study will take approximately one hour to complete. **THIS IS NOT A TEST. There are no right or wrong answers -- just your answers. Please answer all questions if you can. If you do not want to answer a question, you do not have to.**

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(DETACH HERE AND RETURN)

Date

Name (Please print)

Signature

Appendix F
Background Information Questionnaire

8. How much education does your father (stepfather or male guardian) have? (Check one)

- Some high school
- Graduated from high school
- Vocational school or technical school
- Some College
- Graduated from university
- Attended graduate or professional school (for example, to be a doctor, lawyer)

- Don't know

9. What is your father's occupation? (describe the kind of work he does: BE SPECIFIC)

10. How much education does your mother (stepmother or female guardian) have? (Check one)

- Some high school
- Graduated from high school
- Vocational school or technical school
- Some College
- Graduated from university
- Attended graduate or professional school (for example, to be a doctor, lawyer)

- Don't know

11. What is your mother's occupation? (describe the kind of work she does: BE SPECIFIC)

12. How do you describe yourself in terms of ethnic or cultural heritage? (Check one)

- White (of European Ancestry)
 - African American
 - Native American
 - Asian American
 - Hispanic
 - Other (If you would describe your ethnic or cultural heritage in some way that is not listed above, please use this space to do so.)
-

Appendix G
Epistemic Doubt Interview

Driving Age

In a small town in Washington State a meeting had been called about whether the local high school should continue to offer a driver's education course. Many parents were against the school offering this course and many students wanted the course to continue. A committee of parents and a students' committee both wrote articles which appeared in the local paper before the meeting took place. Parts of these articles are shown below:

Report by The Parent's Committee for Safe Driving:

We are opposed to the high school offering a driver training course for its students. Scientific information presented in this paper over the past few weeks clearly shows that 16 year olds, as a group, are not responsible enough to be trusted with the handling of a motor vehicle. While the law now permits 16 year olds to obtain a driver's license, with parental permission, teenagers should not be allowed to drive until they are at least 18 years old. Offering a driver training course through the school puts unfair pressure on parents to let their children learn to drive before they are 18 years old. The course must be taken out of the school immediately for the safety of all concerned.

Report by The Student Committee for Young Drivers:

We are in favor of continuing the driver training course in our high school. The scientific information that has been printed in this newspaper and elsewhere support the view that 16 year olds are just as responsible as adults and should be able to learn to drive as soon as they are legally allowed to do so. The driver training course in the high school encourages students to follow a proper training program and become better drivers. The law allows us to drive at 16 years of age and we should have a training course in our school for everyone to take.

Probe Questions

1. On the basis of what you've read tell me what the parents' and students' committees said about the issue of 16 year olds being responsible enough to drive.
2. Are the arguments and conclusions of the two committees (as they are presented here) different in any important ways? How are they different?
3. How could these two committees end up having such different things to say about the issue of 16 year olds being responsible enough to drive?
4. Why do you think these two committees end up having such different articles?
5. Do you think one of the committees has got the facts wrong? How important is that to the disagreement? (Would that be important?)

6. If these two groups had all of the same information might they still disagree? Explain why that is or is not possible. (It sounds as though you're saying people can view things in any way they want, is that what you are saying?)
7. What if another group reviewed the same information and decided that kids should be allowed to drive when they were twelve years old, would that be an okay opinion to have? Why or why not?
8. What if a group of specialists reviewed the positions of the parent and student committees. Do you think that the specialists might know what was best to do? What makes you say that?
9. Is there a way of deciding which of these reports the principal should pay most attention to in deciding the fate of the driver training course? Why or why not?
10. What kinds of things might the principal consider in order to determine what to do about the driver education course?

Speed Limit

Recently, in Washington State a decision was made to raise the freeway speed limit outside of city limits from 55 miles per hour to 70 miles per hour. Many people wanted the speed limit to remain at 55 m.p.h. and many other people wanted the speed limit raised to 70 m.p.h. A committee of citizens in favor of raising the speed limit to 70 miles per hour and a committee of citizens in favor of maintaining a 55 mile per hour speed limit both wrote articles which appeared in the local paper. Parts of these articles are shown below.

Report By The Committee for the 55 Mile Per Hour Speed Limit:

We are opposed to the raising of the freeway speed limit from 55 to 70 miles per hour. Scientific information presented in this newspaper over the past few months clearly shows that the 70 m.p.h. speed limit is dangerous. While the law now allows individuals to drive at 70 m.p.h. in some areas outside of cities, this increase in the speed limit has placed drivers at much greater risk for accidents and fatalities. The speed limit must be kept at 55 m.p.h. in order to protect all drivers throughout the state.

Report By The Committee for the 70 Mile Per Hour Speed Limit:

We are in favor of having a 70 m.p.h. speed limit on Washington State freeways. Scientific information that has been printed in this newspaper over the past few months clearly shows that a 70 m.p.h. speed limit is safe and does not increase the possibility of accidents. The law currently allows individuals to drive at 70 m.p.h. in some areas of Washington State and the safety of drivers has been maintained. The 70 m.p.h. freeway speed limit should be kept on the freeways of Washington State.

Probe Questions

1. On the basis of what you have read, tell me what these two committees had to say about the speed limit on Washington State freeways?
2. Are the arguments and conclusions in these two articles different in any important ways? How are they different?
3. Why do you think the authors of these two articles reached such different conclusions?
4. On the basis of what you have read, do think that one of these groups is mistaken or has gotten the facts wrong? How important are such mistakes in accounting for the different conclusions of these articles? (Would that be important?)

5. If these two committees had all of the same information, might they still disagree?
6. It sounds as though you are saying that people can view things in any way they want, is that what you mean?
7. What if another committee looked at these same facts and wrote an article which said that the speed limit should be raised to 80 m.p.h. or lowered to 45 mph. Would that be an okay opinion to have? Why or why not?
8. What if an expert from the State Patrol read both of these articles, would he or she be able to tell what the speed limit should be in Washington State? What makes you say that?
9. Is there a way of deciding which of these articles government officials ought to pay most attention to in deciding what the speed limit should be in Washington State? Explain further or why not?
10. What other kinds of things might government officials consider in order to get a clear picture of what the speed limit should be in Washington State?

General Probe Questions

1. What is it about these situations that makes finding out or deciding what is best or right so hard?
2. Is that true just for these situations or is it generally true? That is, are these just weird situations or are there a lot of situations like these in life and the world?
3. How should we approach these sorts of situations, what should we do?
4. How should we decide what to believe and what to do?
5. We could just decide to go our own ways when we disagree but as in these situations we often cannot do that. What then shall we do?
6. How do we decide what to think in these sorts of situations?

Appendix H
New Imaginary Audience Scale (Lapsley, FitzGerald, Rice, & Jackson 1989)

DIRECTIONS: How often do you daydream about, or imagine yourself to be in the following situations? In order to tell us how often you think about these situations, just place a mark on the appropriate box indicating either 'never', 'hardly ever', 'sometimes' or 'often'.

1. Winning a lot of money

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

2. Being a musical recording star

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

3. Being a movie or t.v. star

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

4. Winning an important game for your team

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

5. Being popular with friends

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

6. Being admired for the way you look

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

7. Being a good athlete

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

8. Being admired because of the way you dress

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

9. Being an important leader

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

10. Performing in front of your school in a play

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

11. Being admired because of how smart you are

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

12. Having a popular boyfriend or girlfriend

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

13. Performing in front of your school in a band

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

14. Rescuing a friend from danger

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

15. Saving someone's life

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

16. Standing up to a bully

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

17. Winning an important award

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

18. Showing others that you are strong

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

19. Imagining how others would feel if you were gone

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

20. Showing others that you are kind and friendly

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

21. Having a lot of friends

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

22. Getting your feelings hurt in public

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

23. Making people sorry for hurting you

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

24. Getting back at an enemy

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

25. Developing a friendship with someone who doesn't like you

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

26. Imagining how others would feel if you lost your mother or father

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

27. Imagining how others would feel if you were in the hospital

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

28. Giving an important speech

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

29. Being rejected by a boyfriend or girlfriend

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

30. Being admired because you are funny

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

31. Being admired because of the car you have or want to have

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

32. Being admired because of your CDs, tapes, or stereo system

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

33. Imagining what others are thinking about the way you look

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

34. Asking a popular boy or girl for a date

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

35. What it's like to be married

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

36. Making a good impression on your teachers

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

37. Imagining what everyone will think if you become famous

Never	Hardly Ever	Sometimes	Often
-------	-------------	-----------	-------

38. Other people seem to enjoy it when I am the center of attention

Never	Hardly Ever	Sometimes	Often
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Appendix I
New Personal Fable Scale (Lapsley, FitzGerald, Rice, & Jackson 1989)

DIRECTIONS: People believe different things about themselves. We would like you to read the questions below and use the following scale to rate how you feel about each of the questions. Just place a mark on the appropriate box indicating either 'strongly disagree', 'kind of disagree', 'don't really agree or disagree', 'kind of agree', or 'strongly agree'.

Example: Both of the following answers mean the same thing. Please be sure to read each statement carefully before selecting your answer.

I like to listen to music.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

I don't like to listen to music.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

1. I believe I can do anything I set my mind to.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

2. Nothing seems to really bother me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

3. No one has the same thoughts and feeling that I have.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

4. I think that I am more persuasive than my friends.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

5. I believe that no one can stop me if I really want to do something.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

6. I'm somehow different from everyone else.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

7. It often seems like everything I do turns out great.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

8. I don't think anything will stand in the way of my goals.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

9. I'm the only one that can understand me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
--------------------------	-------------------------	---------------------------------------	----------------------	-----------------------

10. I believe that other people control my life.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

11. I don't believe in taking chances.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

12. I believe that I am unique.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

13. I think I can be anything I want to be.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

14. I'm a fragile person.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

15. I think that deep down everybody is the same.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

16. I believe that everything I do is important.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

17. I believe in knowing how something will turn out before I try it.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

18. I'm just like everyone else.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

19. I think I'm a powerful person.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

20. I believe in taking risks.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

21. Everybody goes through the same things that I am going through.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

22. I think that I am better than my friends are at just about anything.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

23. I tend to doubt myself a lot.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

24. It's hard for me to tell if I am different from my friends.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

25. I often feel that I am insignificant and that I don't really matter.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

26. Other people don't influence me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

27. There isn't anything special about me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

28. I often think that people don't listen to what I have to say.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

29. There are times when I think that I am indestructible.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

30. I honestly think I can do things that no one else can.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

31. I can get away with things that other people can't.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

32. Everyone knows that I am a leader.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

33. Nobody will ever really know what I am like.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

34. No one sees the world the way that I do.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

35. It is impossible for people to hurt my feelings.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

36. People always do what I tell them to do.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

37. People usually wait to hear my opinion before making a decision.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

38. I usually let my friends decide what we are going to do.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

39. My feelings are easily hurt.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

40. Special problems, like using drugs or becoming pregnant could never happen to me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

41. I enjoy taking risks.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

42. It is easy for me to take risks because I never get hurt.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

43. I don't take chances because I usually get in trouble.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

44. I am always in control.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
-------------------	------------------	--------------------------------	---------------	----------------

45. I am not afraid to do dangerous things.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
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46. Sometimes I think that no one really understands me.

Strongly disagree	Kind of disagree	Don't really agree or disagree	Kind of agree	Strongly agree
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Appendix J
Relational Provision Loneliness Questionnaire (Hayden, 1989)

DIRECTIONS: For the following sayings, think about yourself and people your age when you answer. Just place a mark on the appropriate box indicating either:

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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1. I feel part of a group of friends that do things together.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

2. There is someone my age I can turn to.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

3. I have a lot in common with other people my age.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

4. There is someone my age I could go to if I were feeling down.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

5. I feel in tune with other people my age.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

6. I have at least one really good friend I can talk to when something is bothering me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

7. I feel other people my age want to be with me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

8. I have a friend who is really interested in hearing about my private thoughts and feelings.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

9. I feel that I usually fit in with other kids around me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

10. I have a friend I can tell everything to.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

11. When I want something to do for fun, I can usually find friends to join me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
--------------------	------------------------------	-----------------------	-------------------------	------------------------

12. There is somebody my age who really understands me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

13. When I am with other people my age, I feel I belong.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

14. There is a friend I feel close to.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

DIRECTIONS: For the following items, think about yourself and your family when you answer.

15. In my family, I feel part of a group of people that do things together.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

16. There is someone in my family I can turn to.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

17. I have a lot in common with people in my family.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

18. There is someone in my family I could go to if I were feeling down.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

19. I feel in tune with people in my family.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

20. I have at least one person in my family I can talk to when something is bothering me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

21. I feel like people in my family want to be with me.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
-------------	-----------------------	----------------	------------------	-----------------

22. I have someone in my family who is really interested in hearing about my private thoughts and feelings.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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23. I feel that I usually fit in with my family.

Always True	True Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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24. I have someone in my family I can tell everything to.

Always True	Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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25. When I want to do something for fun, I can usually find people in my family to join me.

Always True	Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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26. There is someone in my family who really understands me.

Always True	Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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27. When I am with my family, I feel like I belong.

Always True	Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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28. There is someone in my family I feel close to.

Always True	Most of the Time	Sometimes True	Hardly Ever True	Not At All True
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