A STRUCTURAL EQUATION MODEL OF CONTRIBUTING

FACTORS TO ADOLESCENT SOCIAL INTEREST

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The focus of the present study was to test through SEM the relationships between family influences (FI) and school influences (SI) on factors hypothesized to be associated with adolescent social interest: school belonging (SB), extracurricular participation (EP), and peer/romantic involvement (PRI). The final model consisted of FI and SI that contributed to the expression of adolescent social interest. FI included parental communication and parental caring. SI consisted of teacher fairness. SB consisted of a child's self-reported feelings of belonging at school, EP included self-reported involvement in sports or academic clubs, and PRI consisted of self-reported desire for romantic involvement or desire for participation with others. The proposed model suggested that FI contributed significantly to self-reported SB, EP, and PRI. Additionally, it was hypothesized that SI would contribute significantly to SB and EP, but not to PRI. The data used in the current study were part of an existing data set collected as part of the National Longitudinal Study on Adolescent Health. The total sample size for the present study was 2,561 male and female adolescents aged 12-19 years. The data consisted of adolescent and parent self-report information. Results suggested a significant relationship between FI and self-reported SB and PRI. As expected, a significant relationship existed between SI and SB. Also as expected, no significant relationship existed between SI and PRI. Neither the relationship between FI and EP nor SI and EP were significant. When analyzed separately, a significant relationship existed between SB and PRI; however, no significant relationship was found between SB and EP. Results also indicated several of

the fit indices, including the average off-diagonal absolute standardized residual, the comparative fit index (CFI), and the Bentler-Bonett non-normed fit index (BBNFI), were a low to moderate fit. However, the final model was highly skewed and the model chi-square and chi-square were both exceptionally high, indicating the model appeared to moderately fit the data, but the need for further refinement is clear.

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CHAPTER I

INTRODUCTION TO THE STUDY

Numerous people have proposed theories of human personality and behavior.

Sigmund Freud, the founder of classical Psychoanalysis, contended that the etiology of

people's problems is their unresolved, intrapsychic conflicts from childhood (Arlow,

1995). Carl Jung purported that people's problems were largely a result of diminished

productivity of the conscious mind that is caused by an intrusion of unconscious material

(Rychlak, 1981). Alfred Adler asserted that people's problems related primarily to social

factors in the human experience.

Adler (1956) developed a psychological and psychotherapeutic system that he

titled Individual Psychology (IP). One tenet of IP is that people will face various

challenges throughout life, which Adler (1956) termed the "life tasks": work, love, and

society. Ansbacher and Ansbacher (1979), later proponents of IP, identified two additional

tasks: spirituality and self. From an IP perspective, people are considered socially

embedded, forward moving, creative, responsible, and capable of change. Instead of

focusing solely on intrapsychic processes as the root of mental health problems, as did

Freud and Jung, Adler believed that clinicians must take into account the interpersonal or

social aspect of an individual's life (Adler, 1927; Ansbacher & Ansbacher, 1956). Adler

(1927) believed that all behavior occurs in a social context, and people cannot be

understood in isolation; rather, they must be viewed in relation to other human beings.

Adler (1927) stated, "the social feeling, next to the striving for power, plays the most

important role in the development of character" (p. 166).

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The study described herein explores phenomena related to the basic Adlerian concept of social interest. Social interest is the desire for a better humankind, the world, and the universe (Manaster & Corsini, 1982). Also called Gemeinschaftsgefuhl, or "social feeling" (Adler, 1956), it is an innate potentiality that must be developed (Manaster et al., 1982; Mosak, 1995). A person with highly developed social interest feels a sense of belonging in the community and strives through behavior for the advancement and welfare of others (Ansbacher & Ansbacher, 1964). Although people are born with the capacity for social interest, its manifestation in a person's feeling a sense of belonging and one's contribution to the welfare of others is dependent upon developmental influences. Adler believed that a person's level of social interest was the defining characteristic of mental health. More specifically, a low level or underdeveloped social interest was indicative of mental illness whereas higher or more developed levels of social interest typified mental health.

Adler addressed the way that social interest may be expressed in human behavior. Specifically, he believed that people with highly developed social interest engage in pro-social, cooperative behavior. People with underdeveloped social interest are likely to participate in uncooperative behavior including crime and substance abuse (Adler, 1927). In the following study, people will be classified as expressing high or low social interest. Thus, Adler's view on the classification of people's symptoms deserves mention.

Adler (1956) cautioned clinicians in the use of typologies or classifications to describe people. He supported the use of typologies in the diagnosis and generalization of client symptoms. However, he warned clinicians that focusing solely on a diagnosis or

classification will likely lead to continual misunderstandings between counselors and their clients (Adler, 1956). In the current study, the researcher will make reference to high or low social interest, but only in the context of identifying factors that contribute to social interest development. Thus, for research purposes, people may be classified as exhibiting behavior typical of either high or low social interest. The ultimate aim of this study is to identify the factors that contribute most significantly to social interest development so that clinicians, parents, and schools may work to foster social interest and thereby, at least theoretically, to prevent adolescent maladjustment.

Adolescents face a myriad of developmental challenges. Although some successfully pass through the various developmental stages, others experience great difficulties. The adolescent years are characterized by changes in aspects of life including puberty, social status, cognitive ability, school relations, and sexual relations (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & MacIver, 1993). From an IP perspective, the degree to which a person successfully meets the challenges of life, and more specifically the period of adolescence, is greatly influenced by the level of social interest the person developed throughout childhood.

Adlerian counselors have contributed significantly to the existing literature on child development (Dinkmeyer & Dreikurs, 1963; Dreikurs, 1957; Dreikurs & Grey, 1968). In addition, Adler, Dreikurs, and other proponents of Individual Psychology were well known for their contributions to child guidance clinics (Mosak, 1995). Despite the many contributions made for the advocacy of children, Adlerian counselors have not provided substantial empirical evidence of the process of social interest development in adolescents.

Although the construct of social interest has been studied extensively, few researchers have sought to investigate the numerous factors that contribute to social interest development in adolescents. Researchers who have investigated social interest (Ansbacher, 1991; Ansbacher 1993; Bubenzer, Zarski, & Walter, 1997; Buda, 1981; Chandler, 1986; Farnum, 1981; LaFountain, 1996; Lewis, 1991; Smithells, 1983; Taylor, 1980; Watkins, 1985; Watkins, 1994;) have not conclusively demonstrated through structural equation modeling (SEM) the relationships between family and school influences on social interest development in an adolescent sample. Therefore, to identify the relationships between parent and school influences on adolescent social interest development could be a substantial contribution to the field of mental health.

Statement of the Problem

Manaster and Corsini (1982) reported that only 250 empirical research studies have been conducted on Individual Psychology. Few of these have addressed developmental pathways of IP constructs. More specifically, a thorough review of the IP professional literature revealed that no one has investigated, through structural equation modeling, the relationships between family and school influences on social interest development in adolescents. In a reprinted article from 1935, Adler commented that "a great improvement in the next generation can be assured by preventive work" (Adler, 1982, p. 6). He argued that strategies to foster social interest in people must be developed and improved. Before they can be implemented, they must be understood. Nearly 30 years ago, Farnum (1981) urged researchers to investigate the various influences on social interest development in children. To date, no researcher has utilized SEM in response to

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her call. Thus, information regarding the relationships between family and school influences on social interest development will be an improvement upon previous research in the following three ways.

First, in an attempt to reverse the recent increase in adolescent criminal activity (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Mac Iver, 1993; Hinshaw & Anderson, 1996), a need exists for researchers to understand more fully how social interest develops so that interventions can be tailored to specifically enhance its development in this population. Second, clinicians in counselor education and other mental health disciplines may be able to more adequately train beginning counselors in ways to foster social interest development in clients, and these counselors may in turn teach parents and teachers how to facilitate social interest development in their children and students, respectively. Third, such an undertaking promotes research in Adlerian psychology. Until recently, Individual Psychology has been narrow in how constructs are defined and empirically verified.

In summary, the purpose of the study is to investigate the relationships of family and school influences on adolescent social interest development through structural equation modeling. Additionally, the researcher will further investigate components that are believed to be associated with the construct of adolescent social interest.

Review of Related Literature

This section presents a review of literature related to basic tenets and concepts of

IP, including the parent and school factors that are believed to influence the development of social interest.

Individual Psychology

To conceptualize a theory as vast as Individual Psychology, one must break it down into major theoretical constructs. Heinz L. Ansbacher (as quoted in Manaster & Corsini, 1982), the first editor of the Journal of Individual Psychology, provided a description of IP that seems to grasp Adler's major theoretical ideas:

> The Journal of Individual Psychology is devoted to a holistic,
> phenomenological, teleological, field-theoretical, and socially oriented
> approach to psychology and related fields. This approach is based on the
> assumption of the uniqueness, self-consistency, activity, and creativity of
> the human individual (style of life); an open dynamic system of motivation
> (striving for a subjectively conceived goal of success); and an innate
> potentiality for social life (social interest) (p. 2).

Dreikurs (1960, p.3-10) identified IP's five basic assumptions about human nature, personality development, maladjustment, and how people change. First, all human behavior occurs in a social context. People cannot be understood in isolation (Mosak, 1995), because they are "socially embedded" (Ansbacher & Ansbacher, 1956, p. 127). Some students of IP have misunderstood the difference between social embeddedness and social interest. Thus a brief explanation is warranted. Social embeddedness is a situation or part of the human condition that is inescapable (Ansbacher et al., 1956). People are a part of the larger community. Mosak (1995) likened the concept of social embeddedness to

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Kurt Lewin's field theory where human behavior is seen as a result of the interaction between the individual and the environment. Conversely, IP views social interest as a "social coping attitude" (Ansbacher et al., 1956, p. 127). The concept of social interest, an attitude of cooperation and behavior that contributes to others, is fundamental to the understanding of human nature. According to Adler (Ansbacher & Ansbacher, 1973), "everything we find valuable in life, what exists and what will remain, is forever a product of [the] social feeling" (p. 35). Social interest as a construct will be discussed in more detail in a later section of this review.

Second, all humans are self-determined and creative. Soft-determinism, as opposed to hard determinism, implies that people are not determined entirely by biology or social factors; rather, they use their heredity and environment to fulfill a purpose (Ansbacher & Ansbacher, 1956; Manaster & Corsini, 1982). According to Mosak (1995), "Adlerian psychology is a psychology of use rather than of possession" (p.61). Adler made reference to humans as artists of their personalities (Manaster et al., 1982, p. 66). Individual Psychology posits that neither biology nor environment alone cause behavior. Rather, the importance is placed on how people use creativity, environmental influence, and biological predisposition to fulfill their goals (Manaster et al., 1982; Mosak, 1989; 1995).

Third, all humans experience a subjective perception of their world. Understanding the individual's phenomenological view of the world is central to understanding the person. The cognitive organization and life-style that people develop refers to the assumptions that they create to help them organize life experiences, understand the

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experiences, predict their recurrence, and control their influence (Mosak, 1995, p.52).

Fourth, all behavior is seen as purposeful in nature. This concept is referred to as teleology (Dreikurs, 1960). For Adler (1956) "the psychic life of man [sic] is determined by his goal. No human being can think, feel, will, dream, without all these activities being determined, continued, modified, and directed, toward an ever-present objective" (p. 19).

Fifth, IP supports the holistic view of people and their behavior. Rather than adopting an aggregate view of humans that separates their thoughts, actions, and feelings, proponents of IP prefer to view people as operating as a unified whole. Humans are made up of "indivisible units" (Manaster & Corsini, 1982, p.2). Manaster et al. (1982) described holism by contrasting it with the concept of reductionism. Reductionism involves the reduction of things into their basic parts. Rather than understanding people by reducing them to their basic components of thinking, feeling, or behaving, the Adlerian attempts to understand people in their totality (p.6). That is, IP counselors attend to how a person's thoughts, feelings, and actions are somehow consistent and unified in their purpose.

Adler believed two basic dynamics underlay all human phenomena: (a) striving for significance and (b) social interest (Manaster & Corsini, 1982). People are constantly striving to attain significance and to overcome feelings of inferiority (Adler, 1982; Brachfeld, 1951). Inferiority feelings are universal because of children's universal experience of relative incompetence and weakness in relation to adults. Children's feelings of inferiority are considered the starting point for their striving to compensate and overcome. Because of children's high level of felt inferiority and related strength of desire

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to overcome those feelings, childhood is a time of particularly high activity in the formation of personality (Dreikurs, 1967).

To overcome the feelings of inferiority, people compensate by striving for significance. Adler (1933) believed that striving for significance is an innate quality to the human condition, though it manifests itself in varying degrees with different people because of each person's uniqueness and creativity.

In an attempt to overcome inferiority, individuals develop convictions to help them organize, understand, predict, and control various experiences. This constellation of convictions is most commonly referred to as an individual's life style (Mosak, 1995, p. 52). A person's behavior, thoughts, and feelings piece together to express the life style. The lifestyle has a constant theme, the desire for significance (Adler, 1982; Manaster & Corsini, 1982), and involves some level of social interest. Mosak defined convictions as "conclusions derived from [an] individual's apperceptions, and [constituting] a biased mode of apperception" (p. 52). To understand the person, one must not only understand the person's behavior and feelings, but also the person's convictions about self, others, and the world.

Social Interest

To strive toward a better future for humanity, the world, and the universe is social interest (Manaster & Corsini, 1982). Gemeinschaftsgefuhl, a term often used by Adler, is translated in English terms as social feeling (Ansbacher & Ansbacher, 1956). Feeling a sense of belonging is essential in the development of a healthy personality. Manaster et al. (1982) stated that humans not only need others, but also they need to feel needed by

others in order to attain belongingness (p.47).

Adler (1928) described social interest as involving one's ability to identify with others. Murphy (1994) also believed that feelings of empathy and identification with the "larger social community" (p. 19) were central components of social interest. According to Ansbacher (as cited in Nystul, 1992), community feeling is the most accurate translation of social interest. Community feeling includes parental love, brotherly love, sexual love, and patriotic love. People may also express community feeling through an appreciation for plants, animals, and other inanimate objects. Ansbacher emphasized that community feeling relates to things not only in the present but also in the future. In other words, community feeling involves not only a sense of belonging but an ongoing effort to better the community (Nystul, 1992).

Ansbacher (as cited in Eriksson, 1992) delineated between an object dimension and a process dimension of social interest. The object dimension refers to things in the outer world to which someone directs social interest. The process dimension includes the interest component that people theoretically develop in three phases. In the first phase, one's social interest is considered an innate potentiality for cooperation that one has yet to develop. During the second phase, one's aptitude is developed into skills of empathizing, cooperating, and contributing to others but without an underlying philosophy or attitude of benevolence. Finally, in the third phase, one adopts an underlying attitude of cooperation and contribution that manifests in yet more overt actions that express social interest. Thus, fully developed social interest consists of both a behavioral and an attitudinal component (Ansbacher, 1991).

A person with highly developed social interest pursues a position of significance that includes a goal for a better humankind. An individual with an underdeveloped social interest still pursues the goal of significance but does so for personal gain and not for the betterment of society: self-interest rather than social interest (Adler, 1931; McBrien, 1985; Richardson & Guignon, 1991). Adler (1931) spoke of human nature according to IP:

> Individual Psychology, accordingly, maintains that, due to [one's] physique, i.e., physical condition, a biological factor, [a person] is inclined toward social interest, toward the good. We find neurotics, psychotics, suicides, etc., only when social interest is throttled. In this case the child becomes egoistic, loses interest in others and presses [the] biologically founded striving for significance toward the useless side to reach [the] goal of personal superiority. (p. 211)

Understanding the role of social interest in mental health and mental illness is essential. For example, Eriksson (1992) purported that social feeling was Adler's criterion for mental health. Adlerians consider people with mental illness as discouraged rather than sick (Mosak, 1995). Whereas Adler seemed to attribute problems in living to the "throttling" of social interest (Adler, 1931), more recent Adlerians have suggested a correlative rather than causal relationship between social interest and mental illness. Modifying Adler's original view somewhat, Bickhard and Ford (1991) contended that underdeveloped social interest should not be considered a cause or explanation for the existence of mental illness. Rather, it describes what mental health is, not how it develops or its etiology (p. 62). Thus, it can be concluded that someone who pursues the life tasks

with a high degree of social interest is considered mentally healthy while another person who meets life's challenges with a low degree of social interest is considered mentally unhealthy.

Mosak (1991) identified ten components that comprise the construct of social interest. People with highly developed social interest will possess the following characteristics: (a) the courage to pursue the life tasks of work, friendship, and love; (b) the courage to be imperfect; (c) a desire to contribute to the welfare of others; (d) the confidence to remain hopeful and recognize that, despite weaknesses and inadequacies, people are not helpless; (e) the capacity for caring: an overall empathy one feels for others; (f) the compassion that is characterized by a reverence for all forms of life; (g) the creativity to generate new options when the ones present are not sufficient; (h) the desire for closeness, including a yearning for social acceptance and connectedness; (i) the ability to cooperate and work collaboratively with others; and (j) the commitment to act responsibly for the benefit of self and others. Furthermore, Mosak asserted that no one exemplifies fully developed social interest.

Some critics may argue that desire for closeness and connectedness somehow precludes the importance of self-sufficiency and independence. However, Adler (as cited in Crandall, 1980) purported that the interest and cooperation that people exhibit to others should be a supplement to "legitimate self-interests" (p. 481).

In a study of social interest, Watkins and St. John (1994) investigated the relationships of empathy, interpersonal contact, happiness, and narcissism to social interest as measured by the Sulliman Scale of Social Interest (SSSI). They found significant

positive correlations between scores on the SSSI and on the two subscales of the

Interpersonal Reactivity Index (IRI): perspective taking ($r = .45$, $p < .01$) and empathic

concern ($r = .41$, $p < .01$). Additionally, they identified positive correlations between the

SSSI and the Berkman Social Network Index (BSNI) for three scales: close friends ($r =$

$.29$, $p < .01$), close relatives ($r = .16$, $p < .05$), and friends/relatives seen at least one time

per month ($r = .14$, $p < .05$). Additionally, Watkins et al. (1994) found a significant

positive relationship between the SSSI and a happiness self-rating: ($r = .38$, $p < .01$).

Finally, the researchers found a negative correlation between the SSSI and the total score

from the Narcissistic Personality Inventory (NPI). Although the authors were providing

empirical validity for the SSSI, they also supported the Adlerian contention that social

interest is positively correlated to empathy, interpersonal contact, and overall happiness.

Social Interest Development

Individual Psychology posits that people are born with the capacity for social

interest. Adler viewed social interest as an innate potentiality that must be consciously

developed (Adler, 1956; Ganz, 1953; Mosak, 1991; Mosak, 1995). Adler (1991) believed

that people could develop social interest in childhood or in later life. He contended that

this ability is possible only if people have grown in an environment where they felt

connected with others and felt a sense of belonging. People must be willing to accept not

only the pleasantries of life but also the travesties of life (Adler, 1991). Proponents of

Individual Psychology have argued that the development of social interest is influenced

largely by those factors that are likely to contribute to a child's sense of belonging. For the

purposes of this study, family and school influences will be the focus of investigation.

Family influences. From an Adlerian perspective, the perceptions that children have of life experiences in the first six years of life are the most influential in human personality development. Though similar on the surface to Freud's contention that personality is formed in the first six years of life, the fundamental difference lies in the word 'perception.' Adler made reference to an individual's perception of an event as more influential than the event itself and contended no two humans react in the same way to an identical stimulus. If asked, each will give diverse answers that may sound similar but are nonetheless different. Because people are unique and creative, they interpret their experiences in unique, subjective ways, and based on their subjective perceptions, children come to conclusions about themselves, others, and the world (Mosak, 1995). Then children, and later adolescents and adults, further organize their perceptions to fit their view of self, others, and how they must be in order to attain significance in the social order (Adler, 1956).

Fundamental to the theory of Individual Psychology is the belief that the family is the first opportunity the child has to feel a sense of belonging and connectedness to the world (Adler, 1927; Mosak, 1995). Families are encouraged to create an atmosphere of equality in the household. Individual Psychologists have long made the analogy of family equality to political democracy (Ansbacher & Ansbacher, 1956; Dreikurs, Corsini, & Gould, 1974). If the parents seek to create a family environment characterized by equality and democracy, the child is more likely to feel a sense of belonging in the family context, and the child is more likely to develop relatively higher levels of social interest.

From an IP perspective, siblings affect each other's personalities, and within every

family, expectations of each child based on the child's gender and birth order exist. Birth order relates not only to the sequential order in which children are born but also the psychological position of the child (Manaster & Corsini, 1982). Psychological position refers to the perceived role that the child fulfills in the family of origin. For example, first born children are usually expected to achieve and become leaders. However, if for some reason the first born cannot or will not assume that role, parental expectations may be passed to the second child. Thus, it is more the perceived order rather than the absolute birth order that is important (Manaster et al., 1982).

The Preparatory Commission to the Congress of Mental Hygiene (1991) identified some basic needs of children. They identified social interest as the foundation for proper social functioning and development. Within their report, they revealed some factors believed to stimulate social interest development in children. Their fundamental belief was that whatever increased a child's sense of belonging and significance would likely heighten social interest development. However, factors that increased a child's feeling inferior, inadequate, or humiliated would likely decrease the subsequent level of social interest development (p 76).

The Commission reported that the most important factor in social interest development in children is the 'maintenance of order without conflict within the family' (p. 76). In a study investigating the relationship between a person's perceived early childhood familial influence and the life-style, Chandler (1986) concluded that participants who perceived their early childhood familial influence as positive had higher social interest levels. Adlerians believe that a child's actual environmental circumstances contribute to

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the likelihood, but do not guarantee, that the child will perceive those circumstances and form convictions that are congruent with those circumstances. Therefore, as children grow and develop, it is important that their familial environment consist of kindness, mutual respect, tolerance for failure, firm boundaries, and reasonable expectations based on the child's abilities (Preparatory Commission to the Congress of Mental Hygiene, 1991, pp. 76-77). The authors discouraged the use of reward and punishment as means of education, for although these strategies may temporarily change behavior, they do not foster the child's desire to cooperate. Rather, the authors encouraged parents, whenever possible, to allow children to confront natural consequences for their behavior, in which failure to comply with familial order and rules is followed by a consequence that is natural and not imposed by the parents (p. 77). Families in which the members are able to cooperate with one another and encourage individual responsibility are more likely to produce children who have self-confidence in their ability to contribute to society in useful ways (Dreikurs, Corsini, & Gould, 1974).

Lewis (1991) proposed that everyone who cares for a young child should take special consideration in providing an environment for playing that fosters a child's development of courage, social feeling, and cooperation. Lewis contended that by allowing children a choice of several appropriate toys with which to play, caretakers can enhance the opportunity of having a creative, socialized child.

Because the maintenance of order without conflict is deemed an important component of healthy development (Preparatory Commission to the Congress of Mental Hygiene, 1991), the relationship of the mother and father would likely be an important

foundation for social interest development in children. Moschetta and Moschetta (1993) believed that partners who were able to reframe their complaints into caring terms could increase their levels of empathy for one another. If parents actually demonstrate empathy, children are likely to perceive and emulate empathy, a component of social interest.

Greer (1994) investigated in a sample of male and female adults ages 22-67 whether adult adjustment and spiritual development were related to father absence. Using the Belonging and Social Interest (BSI) scale of the Basic Adlerian Scales for Interpersonal Success (BASIS) instrument, Greer found less adaptive BSI scores were correlated to lack of perceived father availability. Although several explanations are plausible, it could be that a child's perception of paternal involvement influences social interest development. Another possible explanation is lower levels of social interest may lead to negative perceptions of parental involvement.

In another study, Smithells (1983) investigated whether socialization in physically handicapped, non-mentally retarded children could be increased with parental participation in Adlerian family counseling with or without Adlerian parent education. Although the sample size was small (n=16), results suggested that children's productive socialization skills, social maturity, and school readiness increased when parents received an intervention. This study has several shortcomings, including not controlling for children's exposure to other children, but does suggest a link between prosocial child socialization and parent interventions.

Pembroke (1980) investigated the influence of parent education of communication skills, including skills of active listening, problem solving, and cooperative decision

making, on the moral development of children. Results indicated that participation in the parent education program did not significantly change children's self-concepts or levels of reasoning in areas of justice and authority. Although parents' verbal behavior changed, their attitude did not. Pembroke concluded that the lack of change in the parents' attitude may be an important factor in the non-significant change in the children's self-concept and moral reasoning level. Additionally, Pembroke found that a child's level of reasoning increased with age. Moral reasoning in children is a developmental phenomenon (Pembroke, 1980) and may not be amenable to short-term interventions. Because the parent training program lasted only eight weeks, it would seem unlikely that the children's moral reasoning abilities would increase. Thus, the study provides some support for Ansbacher's claim that social interest includes both cooperative behavior and an attitude of contribution to the welfare of others.

Buda (1981) found that adolescents who perceived their parents as democratic, intrinsically valuing, and promoting trust and responsibility were significantly more likely to express attitudes as measured by the Social Interest Index (SII) and behaviors as measured by the Social Interest Behavior Rating Scale (SIBRS) that reflected a cooperative interest in the welfare of others. One possible explanation for this phenomenon is a cooperative familial environment may be related to an adolescent's cooperative behavior. One limitation of this study is the use of teachers as observers of participant behavior. However, it is interesting to note that although teachers have a number of students to attend to in a given day, and that probably some behaviors, either prosocial or anti-social, may have gone unnoticed, a pattern nevertheless emerged.

Proponents of IP have written extensively on the role of encouragement in healthy personality development of children (Dinkmeyer & Dreikurs, 1963; Dreikurs & Grey, 1968; Manaster & Corsini, 1982). Dinkmeyer et al. (1963) commented that, "encouragement implies acceptance of the individual as he [sic] is" (p. 87). Additionally, he commented that parents and teachers, when responding to a child, should consider the child's developmental level.

Encouragement is different than praise. Praise is evaluative. Conversely, a parent's use of encouragement conveys acceptance of a child's uniqueness and trust of the child's abilities. Adlerians use encouragement to engender courage in clients to pursue their goals in socially useful ways. Encouragement may take the form of the following statement: "You are proud of the picture you painted." However praise will likely sound evaluative: "I'm proud of you." Thus IP prefers encouragement to praise, because use of the former may help children feel accepted for who they are rather than what they do. This is not to say that Adlerians support encouragement of socially useless behavior. Rather, Adlerian counselors use encouragement to foster courage in clients to pursue their goals in pro-social ways. That is, IP promotes the encouragement of clients themselves rather than the encouragement of their behavior.

Some researchers have investigated the relationship between empathy, an important component of social interest, and self-concept. Taylor (1980) investigated the relationship of empathy and self-concept in a sample of young children. Instruments used by Taylor included the Feschbach and Roe Affective Situation Test for Empathy and the Children's Self-social Constructs. Results suggested that relationships between empathy

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and self-esteem, among others, were non-significant. However, it was concluded that a significant positive relationship exists between empathy and children's belief that they share characteristics with their mother (i.e., identification with mother).Thus, one can conclude that the child's identification with the mother is significantly related to empathy development, a component of social interest development.

Lewis (1991) believed that children need to develop a strong sense of courage and an attitude of cooperation during their formative years so that they can confront the challenges of life in an independent but socially useful manner. When children are hungry, the attentive parent is encouraged to give them their food and only the amount that they appear to need. By doing this, children learn an early lesson in cooperation and are likely to begin viewing others as friends rather than hostile enemies (Lewis, 1991, p. 72).

According to Latta (1994), a sample of conduct disordered adolescents had significantly lower scores of social interest than a normal control group. The normal group of high school adolescents as compared to the conduct-disordered group of adolescents reported more frequently having caregivers that were interactive and provided a sense of security and support. Rather than attributing the differences to the actual behavior of the caregivers, it may be that the conduct disordered and non conduct-disordered adolescents have different perceptions of their upbringing.

Dodd (1998) attempted to further clarify the conceptualization of social interest by examining the variables of self-esteem, empathy, and parental bonding as potential correlates of social interest. Results failed to reveal sufficient evidence for the hypothesis that these variables contribute significantly to an explanation of social interest. Dodd

concluded that whether or not the results are truly representative of the relationships between the variables is an unanswered empirical question.

School influences. Even fewer empirical studies exist of the relationship between perceived school influences and adolescent social interest. Adler (as cited in Ostrovsky, Parr, & Gradel, 1992) believed that the school classroom was the place where children could rehearse social interest. Dreikurs, Brunwald, and Pepper (1982) cited the importance of group discussions in school to foster a child's ability to cooperate and accept the different views of other people.

Many authors have cited the utility of encouragement in fostering socially useful behavior (Dinkmeyer & Dreikurs, 1963; Dreikurs, 1967; Dreikurs & Grey, 1968). A goal of the Adlerian counselor is to engender courage in clients to pursue goals in a socially useful way. Dreikurs (1971) believed that encouragement could be defined as, "an action which conveys to the child that the teacher respects, trusts and believes in [the child] and that [the] present lack of skills in no way diminishes [the child's] value as a person" (p. 66). Adler (as cited in Ansbacher & Ansbacher, 1956, pp. 439-442) purported that courageous children see the independence associated with adolescence as an opportunity to achieve, unlike discouraged children who see the independence as a risk of failure. The crucial role of encouragement in a child's acquisition of increased social interest cannot be ignored, for the pursuit of life tasks and daily challenges requires courage. Rather than emphasizing academics solely, schools are urged to help students succeed in life by encouraging them to accept responsibility, demonstrate concern for others, and improve society (Superstein, 1991).

Adlerian counselors contend that criminals and others who participate in socially useless behavior are discouraged. Rather than encouraging socially useless behavior, the Adlerian seeks to foster the development of courage in the "maladjusted" individual. Encouraging the maladjusted person includes acceptance of the person without accepting the behavior. When people have courage, they pursue their goals in socially productive ways. Regarding encouragement, Mosak (1995) believed Adlerian counselors must express faith and non-evaluative acceptance of their clients. Furthermore, he contended that clients, by feeling understood, were likely to develop hope.

Additionally, Dreikurs (1971) contended that parent-teacher interviews conveyed the child's importance and significance. Thus, teachers who frequently consulted with children's parents were demonstrating encouragement.

Adlerians recommend that both parents and teachers frequently sit down with their children or pupils, communicate as equals, and generate solutions for problems. By collaborating, children learn of their significance, responsibility, and influence (Dinkmeyer & Dreikurs, 1963).

Proponents of Individual Psychology also believe that allowing children to face natural consequences for their behavior is a far superior method for fostering social interest development than punishment and reward (Dreikurs & Grey, 1968). Dreikurs et al. (1968) believed that, "natural consequences express the power of the social order and not of a person" (p. 101). He added that adherence to natural consequences served to maintain order without embarrassing the child.

Eldridge (1989/1990) conducted a study to determine if male adolescents ages 13-

18 incarcerated at minimum security detention centers could increase their levels of social interest after participating in a series of group interactions that were led by non-professionals. For ten weeks, the experimental group participated in 90 minute sessions that were designed to foster components of social interest: belonging, cooperation, and significance. Results of a Mann Whitney U t-test indicated a significant increase in social interest scores of the experimental group at the end of the program. Thus, by participating in groups designed to increase social interest, adolescents may be able to affect their level of social interest. Additionally, teachers who provide activities that require adolescents to work together may foster social interest development.

Brown (1988/1989) investigated whether children who manifested behavior disorders would decrease aggressive behavior if social interest levels were increased. Following the experimental group children's completion of peer tutoring, nursing home resident socialization, and group discussions, the teachers of the children reported significantly less aggressive behavior in the experimental group than the control group. However, Brown did not find significant differences between the experimental and control groups in the development of social interest as measured by the Social Interest Scale (SIS). With an adolescent sample, Crandall (1980) found that a number of criteria failed to correlate significantly with scores from the SIS. Because reduced aggression is by definition a feature of increased social interest, it may be that the SIS was not an effective measure of social interest in Brown's (1988/1989) sample of children. Also, another plausible explanation for the failure of the SIS score change may be that overt behavior was altered without affecting the attitudinal component of social interest.

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A study conducted by Edwards (1993) investigated the relationship between teachers' social interest and their students' behavior in the classroom. Results indicated a significant negative correlation between teachers' social interest and their students' scores on the Disruptive Behavior subscale of the Behavior Rating Checklist and the Impatience-Aggression subscale of the Matthews Youth Test for Health. Thus, a relationship may exist between teachers' social interest levels and children's disruptive behavior.

Some researchers (Lantz, 1982; Middleton, 1993/1994) have found support for the prescription of helping behaviors to increase social interest development. Middleton (1993/1994) had a sample of adolescents participate in community service activities and investigated the relationship of participation on social interest development. Although qualitative data consisted of positive self-reported changes in self-esteem, empathy, relationship development, felt significance, awareness, and attitudes toward self and others, quantitative data showed significant changes only on the variable self-disclosure as compared to the control group. In a similar study, Barkley (1982/1983) investigated whether or not adolescent social interest development could be influenced by participation in a peer counseling training program. Although the statistical findings did not indicate a significant relationship between adolescent participation in a peer counseling training program and social interest scores, descriptive data suggested otherwise. The descriptive data indicated that adolescents who participated in the program apparently improved their development of interpersonal skills, a component of social interest.

Janus (1992/1993) studied the role that cognitive behavioral skill training and affective empathy training have in the reduction of adolescent conduct disordered

behavior. Findings suggested that cognitive social skills training and affective empathy training did not produce significant improvements in adolescent self-esteem, affective empathy, cognitive social skills, or behavioral problems. However, Janus collapsed the data, looking at treatment versus no treatment across various treatment sites, and found that adolescents who participated in the training program showed improvements as a result of treatment over time. Additionally, Janus believed that a multi-modal approach, including cognitive social skills training and affective empathy training of juvenile delinquent adolescents, must be implemented.

Dobier (1997) examined the relationship between self-esteem and social interest for eighth grade adolescents of Asian, Hispanic, and African-American ethnic origins. For the entire sample, Dobier found a significant positive correlation between self-esteem as measured by the Rosenberg Self-Esteem Scale and social interest as measured by the Sulliman Scale of Social Interest. Although Dobier's study is a significant contribution to social interest research, the study consisted of a small sample size from one inner city middle school. Thus, the external validity of the study is limited.

Expression of Social Interest

Social interest may be expressed as both attitude and behavior. People with highly developed social interest may often share similar attitudes and behaviors.

Crandall (1980) believed that no one criterion sufficiently defines social interest. Thus, he attempted to validate his Social Interest Scale (SIS) against several criteria that are believed by mental health professionals to comprise the psychological processes: cognitive, affective, and behavioral (Crandall, 1980, p. 484). Crandall found that the

correlations between social interest and various criteria increased with age. Additionally, with an adolescent sample, the correlations were said to be in the "wrong direction" (Crandall, 1980, p. 489). That is, the criteria failed to correlate significantly with scores from the SIS.

Adler purported that social interest directs one's motivation to solve the life tasks: social relationships, work, and sexual intimacy (Stasio, 1998). Thus adolescent social interest may be expressed in such domains as peer relations, extracurricular participation, and romantic involvement. Additionally, adolescents with social interest may also be characterized by an overall sense of belonging.

Model of Social Interest Development

Ansbacher has made tremendous contributions to the advancement of Individual Psychology. Specifically, Ansbacher (as cited in Eriksson, 1992) developed a model explaining how the process dimension of social interest develops. As the reader recalls, he proposed that step one involved the person's innate capacity to develop social interest. Step two entailed the person's acquisition of aptitude and skills to empathize, cooperate, and contribute. Step three included the person's development of a cooperative attitude that ultimately directs pro-social behavior (Eriksson, 1992). It is my contention, however, that an important aspect of the process has been overlooked or at least under-emphasized. Step two of the model does not address how the skills or aptitude are developed. The model proposed herein may serve as an extension to Ansbacher's model by detailing how the skills described in Ansbacher's step two are developed. Thus, the purpose of this investigation is to determine whether a model of adolescent social interest development

that the researcher developed based on the existing related literature is validated through Structural Equation Modeling (SEM).

Individual Psychology has long supported the notion that social interest includes the degree of activity that one uses to fulfill the life tasks of work, socialization, and love. The life tasks of work, socialization, and love are self-explanatory for the adult person. However, for adolescents, adjustments need to be made regarding how social interest may be expressed.

Because the family is considered the primary social environment for children, one could conclude that family influence is the greatest contributing factor to children's sense of belonging, children's participation in extracurricular activities, and children's peer/romantic involvement. Although the family is the primary social environment of children, the school becomes the institution where children spend the vast majority of their time outside the home. Thus, school influences including teacher involvement very likely contribute to a child's sense of belonging, participation in extracurricular activities, and peer/romantic involvement.

For the adolescent, social interest may be expressed in the following three ways: school belonging, extracurricular participation, and peer/romantic involvement. As mentioned previously, social interest consists of both attitude and behavior. For example, a person who feels a sense of belonging, participates in extracurricular activities, and engages in peer/romantic relationships does not necessarily have a high level of social interest. Some people participate in the aforementioned activities for self-interest rather than social interest. They enter such activities without a goal of contribution to the welfare

of others. Although Adler (as cited in Ansbacher & Ansbacher, 1956) believed that people with high degrees of social interest may or may not participate in group activities, he did contend that people with high degrees of social interest show some form of contribution. For the present study, social interest measures were not available, and the existing data did not permit the researcher to investigate the motivation for the behavior. Thus, the expression of social interest was measured by participants' self-reported sense of belonging, participation in extracurricular activities, and involvement in friendships/ love relations.

School belonging consists of a child's feeling accepted and safe in the school environment. Extracurricular participation, similar to the adult's life task of work, may be an expression of a child's ability to cooperate and contribute to the welfare of others. Finally, it is my contention that for adolescents, the life tasks of socialization and love should be combined to comprise a peer/romantic involvement task. Adolescents' involvement or desire for peer or romantic involvement may be an indication of their social interest.

It is likely that a relationship between peer/romantic involvement, school belonging, and extracurricular participation exists, though this is untested. Lantz (1982) completed a study with a sample of 16 presumed depressed participants in which the treatment group received various prescriptions of social interest tasks such as volunteering in the community. The control group, which consisted of non-depressed participants, was not assigned social interest tasks. The treatment group showed a reduction in depression symptomatology and an increase in social interest scores following the completion of

social interest tasks. Thus, support is gained for the Adlerian view that cooperative behavior may not only be an indicator of social interest, but may also contribute to the expression of social interest.

Social interest development is likely a complex phenomenon, one that will not be entirely resolved by this study. However, developing a structural equation model that identifies the relationships between self-reported family and school influences in adolescent social interest development will be a major contribution to the field of mental health and more specifically to Individual Psychology.

CHAPTER II

PROCEDURES

This chapter describes the focus of the research, definitions of relevant terms, and instrumentation that were used. It also describes selection of subjects, collection of data, and procedures including the structural equation model that was used for the various analyses of the data.

Research Focus

The focus of this study addressed two main objectives. First, the study identified through structural equation modeling some potential contributing factors to social interest development in adolescents, based on their subjective perceptions. Specific areas of investigation included presumed family and school influences on adolescent social interest development. Second, the study tested the relationships between contributing factors to social interest development and factors believed to be expressed variables of social interest in adolescents: subjective perception of school belonging, extracurricular participation, and peer/romantic involvement.

In an adolescent population, it was hypothesized that family and school factors influence the expression of social interest in different ways. Specifically, the following hypotheses were formulated (See Figure 1):

1.   Family influence will be shown to contribute significantly to the following
       three areas:

       a.   A significant relationship will be shown to exist between self-
             reported family influence and self-reported school belonging.

b.   A significant relationship will be shown to exist between self-reported family influence and self-reported extracurricular participation.

c.   A significant relationship will be shown to exist between self-reported family influence and self-reported peer/romantic involvement.

2.   School influence will be shown to contribute significantly to the following two areas:

a.   A significant relationship will be shown to exist between self-reported school influence and self-reported school belonging.

b.   A significant relationship will be shown to exist between self-reported school influence and self-reported extracurricular participation.

3.   A significant relationship will be shown to exist between school belonging and extracurricular participation.

4.   A significant relationship will be shown to exist between self-reported peer/romantic involvement and self-reported school belonging.

5.   No significant relationship exists between self-reported extracurricular participation and self-reported peer/romantic involvement.

Definition of Terms

The following terms were operationally defined for this study:

Adolescents - male and female children ages 12-19.

Extracurricular Participation - (see Table 1, Appendix A)- included self-reported participation in team sports, debate clubs, language clubs, civic, political, or other groups that contain an element of group cooperation.

Family Influence - (see Table 1, Appendix A)- included self-reported familial factors, such as relationship between adolescent/parents, condition of home, communication between adolescent/parent, and family organization, and their influence on a child's sense of belonging, extracurricular participation, and peer/ romantic involvement.

Peer/Romantic Involvement - (see Table 1, Appendix A)- included self-reported time spent with friends, desire for romantic involvement, desire for friendship, and attraction to same sex or opposite sex partners.

School Belonging - (see Table 1, Appendix A)- Adolescents who reported feeling important, safe, and accepted at their school.

School Influence - (see Table 1, Appendix A)- included school factors, such as perceived teacher fairness and how the child self-reportedly gets along with others.

Social Interest – "it is an evaluative attitude toward life (Lebensform)" (Ansbacher & Ansbacher, 1956, p. 135). Consists of both attitude and behavior that are expressed in overt behavior that benefits others. For the present study, the researcher defined social interest in three ways: school belonging, extracurricular participation, and peer/romantic involvement.

Collection of Data

The data used in this study were collected as part of the National Longitudinal Survey of Adolescent Health (Add Health). The following information, regarding data collection procedures, is directly from the user's guide manual (Kelley & Peterson, 1998). The United States Congress commissioned Add Health to collect data to measure the social environmental influences on adolescent health. The data was released to the American Family Data Archive (AFDA), Sociometrics Corporation, for distribution to the public for research purposes. The purpose of AFDA is "to facilitate access to the highest quality data sets on topics related to the family, family structure and change, family interaction, and family well being" (Kelly et al., 1998, American Family Data Archive Preface). Some of the variables of interest included diet and nutrition, eating disorders, depression, criminal activity, suicide, health service use, and family influence. For purposes of this study, only select variables of influence were investigated (see Table 2, Appendix A).

The data were collected in two waves. For purposes of the present study, the researcher used only Wave I data. Wave I data was collected between September, 1994, and December, 1995. Both in-school assessments and in-home interviews were conducted. The in-school information was gathered from male and female adolescents in grades 7 to 12. The in-home interviews consisted of responses to a detailed interview of a subset of adolescents selected from the rosters of schools that were sampled. Over 75 % of the adolescents interviewed in their homes also participated in the in-school questionnaire. A third area of assessment included a parent interview in which data were collected from one

parent or parent-figure for each student who was part of the in-home sample (Kelley &

Peterson, 1998).

The data that were used for this study consist of 6,504 cases (N= 6,504) and 5,800

variables. Of the 5,800 available variables, a total of 243 were used in the initial factor

analyses (see Table 1, Appendix A). Community contextual data was also available, and

Kelley and Peterson (1998) acknowledged that it could be merged with the raw data for

various analyses (p. 1).

Participants

The subjects who participated in the study consisted of male and female

adolescents in grades 7-12 from over 80 different communities and one parent or parent

figure for each adolescent. Ethnic origins included African Americans, Caucasians, Puerto

Ricans, Cubans, Chinese, Vietnamese, South Koreans, Nicaraguans, Mexican Americans,

Filipinos, and Japanese. The sample was designed to be representative of the United States

adolescent population.

In-school sample. Add Health used a database collected by Quality Education

Data, Inc. as the primary sampling frame. The sample consisted of 80 eligible high schools;

a school was defined as a 'high school' if it included an 11th grade with an enrollment

greater than 30 students (Kelley & Peterson, 1998). Researchers stratified the sample

based on the following factors: (a) region; (b) urbanicity (urban/suburban/rural); (c) school

type (public/private/parochial); (d) and ethnic representation. "Schools were selected with

probability proportional to size" (Kelley et al., 1998, p.2). Schools that participated in the

study agreed to provide investigators with a roster of their students and subsequently

agreed to administer the in-school questionnaire to their students during a designated period that was supervised by classroom teachers.

Additionally, participating schools provided researchers with information regarding junior high schools that sent graduated students to their respective high schools for the completion of their secondary education. From the junior high schools ("feeder" schools) that were provided, investigators chose one with the probability proportional to the number of students it provided to the high school. When a feeder school refused to participate, a replacement school was obtained. Researchers obtained a pair of schools in the 80 communities sampled; however, because some high schools also served as junior highs and acted as their own "feeder school," in some cases the pair may have in actuality been a single institution. A total of 134 schools were part of the data collection (Kelley & Peterson, 1998).

Students in each school were stratified by grade and sex, and approximately 17 participants were randomly selected from each group so that a total of approximately 200 children was selected from each of the 80 pairs of schools (Kelley & Peterson, 1998, p. 3). Although a total of 12,105 adolescents were interviewed, I had access to only the public use data that consists of 6,504 cases. Furthermore, only about 73% of the 6,504 cases (4,769) completed all three types of Wave I data (in-school, in-home interviews, and parent questionnaire) (Kelley & Peterson, 1998, p. 7).

Instrumentation

The instrumentation consisted of an in-school questionnaire, an in-home interview, and a parent interview. Because the Add Health study was longitudinal in nature, data were collected at two different time intervals. However, this study will use only the

information collected during Wave I. The following information comes from the procedure manual of Kelley and Peterson (1998).

In-school questionnaire (Wave I). The Wave I in-school questionnaires were administered between September, 1994, and April, 1995. Participants were given a self-administered instrument that took approximately 45-60 minutes to complete. Students who missed school the day that the assessments were administered did not complete a questionnaire and were not included in the study. Items from the questionnaire addressed the following topics: social and demographic information, education and occupation of parents, family structure, risk behaviors, future expectations, self-esteem, health status, friendships, and school-year extracurricular activities.

In-home interview (Wave I). Prior to the home interview, adolescents were given the Add Health Picture Vocabulary Test (AHPVT) to assess for hearing vocabulary. The instrument consists of 78 items and is a shorter version of the Peabody Picture Vocabulary Test-Revised (Kelley & Peterson, 1998). Next, all participants were given the same in-home interview, and the sessions took place between April and December, 1995. The in-home interview took approximately 1-2 hours for completion, depending largely on the participant's age and experiences. As expected, the majority was conducted in the participants' homes.

To preserve confidentiality, all data were collected on lap-top computers. For less sensitive topics, interviewers would orally present the question and then enter the participant's response into the computer (Kelley & Peterson, 1998). However, for more sensitive topic areas, Kelley and Peterson (1998) had the participants listen with earphones

to pre-recorded questions and enter the answers directly (audio-CASI). Some of the topics included the following: health status, nutrition, social networks, family dynamics, criminal activities, sexual partnerships, and substance use (Kelley & Peterson).

Parent questionnaire (Wave I). According to Kelley and Peterson (1998), the parent of each participant, preferably the child's mother, was asked to complete a questionnaire with assistance from an interviewer. Topics on the questionnaire included marriages and/or marriage-like relationships, neighborhood characteristics, involvement in volunteer or civic activities, education and occupation, annual income, and parent-adolescent communication and interaction (Kelley & Peterson, 1998, p. 5).

Social interest will be operationally defined, because the existing data set did not include a social interest measure. By using an existing data set, the researcher is aware of certain limitations.

As mentioned previously, social interest consists of both attitude and behavior. For example, a person who feels a sense of belonging, participates in extracurricular activities, and engages in peer/romantic relationships does not necessarily have a high degree of social interest. Some people participate in the aforementioned activities for self-interest rather than social interest. They enter such activities without a goal of contribution to the welfare of others. However, for the study herein, social interest measures were not available and the existing data did not permit the researcher to investigate the motivation for the behavior. As the reader recalls, Ansbacher (as cited in Eriksson, 1992) distinguished between the process and object dimensions of social interest. The present study focused on three expressed areas of social interest that might represent the process

and object dimensions of social interest: school belonging, extracurricular participation, and peer/romantic involvement. Thus, the present study could be a substantial contribution to the existing literature on social interest and the process by which it develops.

Analysis of Data

The following section includes a brief discussion of structural equation modeling (SEM) and concludes with a section explaining how the data were analyzed.

<u>Structural Equation Modeling</u>

Structural equation models are used by researchers who conduct nonexperimental and quasi-experimental research, because the method allows for the "quantification and testing of theories" (Marcoulides & Schumacker, 1996, p. 1). Cliff (as cited in Marcoulides & Schumacker, 1996) argued that SEM is the most significant and revolutionary development that has recently occurred in the field of statistics. Sometimes referred to as "causal modeling," structural equation modeling (SEM) techniques are a primary element of applied multivariate analysis (Marcoulides et al., 1996). Marcoulides et al. (1996) said, "the use of the term structural equation modeling is broadly defined to accommodate models that include latent variables, measurement errors in both dependent and independent variables, multiple indicators, reciprocal causation, simultaneity, and interdependence" (p. 1). Bentler (1988) described SEM as a "confirmatory method, aimed at evaluating proposed theories" (p. 317). In other words, researchers can use SEM techniques to investigate hypothesized relationships between a series of latent constructs.

Generally speaking, structural equation models consist of two types of variables: (1) manifest variables (MVs), and (2) latent variables (LVs). LVs are representative of a

theoretical construct. MVs, also called observed variables, are representative of the specific latent constructs. SEM affords researchers the opportunity to quantify the relationships among many MVs through a small set of LVs (Schumacker & Lomax, 1996).

Schumacker and Lomax (1996) discussed two major components of structural equation models: (1) a measurement model, and (2) a structural model. The former consists of a confirmatory factor analysis of the pre-selected, observed variables and their hypothesized relationships with the latent constructs. Vitanza (1995) contended that confirmatory factor analysis is a preferred method to exploratory factor analysis, because the researcher utilizes "theoretical specification of latent constructs as a priori hypotheses to be tested against correlational data" (p. 37). Once the researcher determines, through mathematical analysis, that a 'good fit' exists between the LVs and the MVs, the researcher develops a structural model that identifies the relationships between the latent constructs.

Bollen and Long (as cited in Schumacker & Lomax, 1996) identified five steps of structural equation models (SEM): (1) Model specification; (2) Identification; (3) Estimation; (4) Testing fit; and (5) Respecification. First, as part of the model specification procedure, I developed a model based on relevant existing literature (see Figure 1, Appendix B) (Schumacker & Lomax, 1996). The latent constructs of family influence (FI), school influence (SI), school belonging (SB), extracurricular participation (EP), and peer/romantic involvement (PRI) were defined by a set of pre-selected observed variables that were believed to be associated with the appropriate construct (see Figure 1, Appendix B). Instrument items were selected based on their hypothesized relationship to a concept

of interest, the "latent construct." Second, I conducted a confirmatory factor analysis of the chosen observed variables to assure that they were significantly related to the respective latent construct. When the chosen observed variables were not significantly related to their respective latent constructs, I used other observed variables until a confirmatory factor analysis revealed that they were significantly related. All observed variables were weighted in one direction so that results were consistent. Additionally, the individual items that were associated with each latent construct were summed to provide a composite score of the respective manifest variable. Table 1 (see Appendix A), shows the items, manifest variables, and latent constructs that were used for the initial factor analyses. The remaining steps, estimation, testing fit, and respecification also required the use of statistical software designed for structural equation modeling.

Schumacker and Lomax (1996) suggested several computer software packages for the running of structural equation models, including LISREL, AMOS, and EQS. Thus, the Schumacker et al. (1996) text was a reference guide in the selection of software packages for the SEM. The model (see Figure 1, Appendix B) was tested using EQS5. After the results were obtained as part of the respecification procedure, a new model emerged that indicated the significant and non-significant relationships between the five latent constructs. In summary, a hypothesized SEM was formulated (see Figure 1, Appendix B), a confirmatory factor analysis of observed variables was conducted, and a respecification of the SEM was drawn. The final product was a SEM that shows the relationships between the latent constructs: some of the contributing factors to adolescent social interest (see Figure 1, Appendix B).

CHAPTER III

ANALYSIS OF DATA, RESULTS, AND DISCUSSION

This chapter presents the results of the study, a discussion of the findings, and suggestions for future research. Overall, the purpose for the study was to investigate several hypothesized contributing factors of social interest in adolescents.

Analysis of Data

Prior to data analysis, all variables in the data set were examined for their relevance in the proposed model of adolescent social interest. A crucial step of SEM is the assessment of the hypothesized measurement model through confirmatory factor analysis. Of the initial 5,800 variables that were available to the researcher, 243 were used in the initial factor analyses based on an a priori decision that these variables might be related to adolescent social interest. The 243 variables selected were initially examined through SPSS, 8th edition. Due to the number of initial variables selected, a series of factor analyses were run to determine the best variables to include in the final model. As shown in Table 1 (located in Appendix A), composite manifest variables (MVs) were to be computed from several individual items, and several MVs were hypothesized for each latent construct (LC). Therefore, the purpose of the factor analyses was to determine if (a) the individual items were significantly correlated, thus warranting summation into a single composite manifest variable, and (b) the manifest variables were significantly correlated with one another to warrant placement on the same LC. Only those factors that correlated at a value of .30 or greater were accepted for further investigation.

Results of the initial round of factor analyses indicated that several of the items and MVs hypothesized to associate (or correlate) with a given LC did not adequately meet this objective. Thus, those items with low correlations were eliminated from the study. For example, because factor analyses indicated that the MV "school condition" (sc) did not load on the latent construct of school influence (SI), it was deleted from the SEM. Overall, 157 items and/or manifest variables from the initial 243 were eliminated from further analyses, leaving a total of 87 MVs and/or individual items for inclusion in the final model (see Table 2, Appendix A).

After identifying and eliminating the items and manifest variables that failed to yield high correlations, a second factor analysis was conducted. Factor analytic results of the MVs for family influence (FI), extracurricular participation (EP), and peer/romantic involvement (PRI) indicated that all variables remaining from the first round of factor analyses sufficiently correlated with their respective LC. With regards to EP, the academic and athletic teams selected a priori to be representative of EP appeared to load onto four distinct factors instead of the two factors initially hypothesized. Thus, EP was defined in the final model by four categories (academic 1, academic 2, sport 1, and sport 2) rather than the initial two categories (academic and athletic).

Overall, 20 manifest variables were retained in the SEM model to attempt to explain the 5 latent constructs (LCs). Table 2 (located in Appendix A) presents a final list of the LCs, the MVs, and the individual items used in the final SEM.

Next, a listwise comparison was run to discern how many participants had responses for all manifest variables. Any individual who failed to respond to a given

manifest variable was eliminated from further analyses. Thus, of the 6,504 participants,

2,561 were included in the final sample. The demographics for the final sample are

included in Table 3 (located in Appendix A). In addition, Table 4 (located in Appendix A)

provides descriptive statistical information for the manifest variables.

Structural Equation Model (SEM) Analyses

Following factor analyses of the manifest variables to be tested in the SEM model,

the next step was to test the proposed structural equation model (SEM), Adolescent

Social Interest (ASI). As shown in Figure 1, the ASI model to be tested was whether the

manifest variables contributed to the latent constructs, and whether the independent latent

constructs (FI and SI) contributed to the dependent latent constructs (SB, EP, and PRI).

Several steps are used to determine the accuracy of a proposed model. Bentler

(1989) suggested looking first at the kurtosis values. With regards to multivariate kurtosis,

the normalized estimate is distributed as a "unit normal variate" (Bentler, 1989, p.85) so

that large values indicate significant positive kurtosis whereas large negative values

suggest significant negative kurtosis. For this model, the normalized estimate (123.9123)

is considered high, suggesting that many of the respondents answered the items in a

positive direction, that is, reported positive relationships, good communication, and so on.

One potential solution suggested by Bentler (1989) was to drop the five cases that are

found to contribute most significantly to the high kurtosis values. In the current study,

however, dropping the five cases that contributed most to the high kurtosis value did not

have a positive effect on lowering the kurtosis value. Rather, it had a more negative effect

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on the goodness of fit indices. Therefore, the five cases remained in the current investigation.

Bentler (1989) suggested that researchers must assess the absence of condition codes, indicating that errors occurred during the evaluation of the data, prior to interpreting results. In the current study, however, the output did not include parameter condition codes (Bentler, 1989), indicating that the parameter estimates were technically acceptable.

Next, Bentler (1989) suggested the researcher interpret the residual covariance matrix (RCM) and particularly the standardized residual covariance matrix. Specifically, Bentler suggested that values lower than .04 for the standardized residual covariance matrices are considered satisfactory. In the ASI model described herein, the average absolute standardized residual and the average off-diagonal absolute standardized residual respectively were 0.0336 and 0.0371, both of which indicated a satisfactory fit.

Bentler (1989) recommended that the iterative summary be assessed prior to evaluating the meaning of results. The iterative summary indicated that eight (8) iterations were completed, and the final iteration value was so small (0.000567) that it is unlikely that optimization problems occurred (Bentler, 1989, p.95). The iterative summary for the current model indicated that the function values decreased across iterations, a favorable phenomenon according to Bentler. The final step in SEM is testing the fit of a proposed model. EQS5 provides several goodness of fit indices including the Bentler-Bonett Normed Fit Index (BBNFI), the Bentler-Bonett Nonnormed Fit Index (BBNNFI), the Comparative Fit Index (CFI), and the Robust Comparative Fit Index (RCFI). According

to Bentler (1989), values of 0.9 or greater on the BBNFI are desirable to deem a proposed model as being a good fit with the existing data, although values greater than 0.6 may be interpreted as a moderate fit. The BBNFI and the BBNNFI for the current model were 0.766 and 0.750 respectively, indicating that the model may be interpreted as a moderate fit. These statistics are presented in Figure 1 (see Appendix B).

The overall ASI model included five latent variables (represented by circles) and 20 manifest variables (represented by rectangles). In addition, an error variance, represented by a square to the right of the manifest variable, existed for every manifest variable. Uni-directional arrows indicate the effects of one construct on another, whereas bi-directional arrows indicate the reciprocal effects of two constructs. In Figure 1, significant pathways are indicated by a solid line with an arrow affixed at one or both ends, and nonsignificant pathways are indicated by broken lines with an arrow.

Figure 1 shows the standardized solutions for each pathway (that is, each arrow). As shown in Table 5 (Appendix A) and Figure 1 (Appendix B), it can be concluded that all paths between the latent constructs, except for FI or SI and extracurricular participation, were significant ($p < .05$). In addition, all manifest variables contributed significantly to the specified latent construct. The results indicated that nearly all of the paths were significant, and several of the fit indices (e.g., RMSEA, CFI, average off-diagonal absolute standardized residual) suggested a mild to moderate fit of the model. However, the current model was highly skewed, and the model chi-square and chi-square were both exceptionally high. Thus, the model appeared to moderately fit the data, but the need for further refinement was clear.

An additional series of analyses was conducted to determine the fit of the ASI model based on gender, race, and age. The obtained fit indices indicated that the final model was appropriate for males, females, Caucasians, non-Caucasians, younger (age 14 or younger), and older (15 or older) adolescents. While the ASI model did not appear to offer a significantly better fit for a particular subgroup as compared to the sample as a whole, it did not appear inappropriate for these subgroups. It should be noted that less than 40% of the sample was non-Caucasian; because the sample may not be representative of the general population, results must be interpreted cautiously.

Due to the structure of the model, bi-directional arrows between SB and EP and the relationship between PRI and SB could not be calculated within the existing model. However, when these relationships were examined independently, the relationships between SB and EP was 0.104, between EP and SB was 0.027, and between PRI and SB was 0.705.

After running the full model, the researcher added a pathway between school influence and peer/romantic involvement in order to test for significance. The standardized solution value for the path from school influence to peer/romantic involvement was non-significant (0.311) as originally hypothesized. It should be noted when this additional pathway was included in the full model, the results of the other relationships were not significantly altered.

Discussion

At present, no one has attempted to identify through structural equation modeling the contributing factors to adolescent social interest. Proponents of Individual Psychology

(IP) have contended that social interest is the criterion for mental health (Bubenzer,

Zarski, & Walter, 1991). Thus, identifying factors hypothesized to contribute to the

expression of social interest may likely assist counselors, counselor educators, and even

parents in the formulation of intervention strategies aimed at facilitating the development

of social interest in adolescents. Therefore, the purpose of the current study was to

identify through Structural Equation Modeling (SEM) the contributing factors that may

influence the expression of social interest in an adolescent sample.

Although the current results must be interpreted cautiously, they suggest that both

family influence and school influence contribute significantly to the adolescents' perceived

school belonging (SB). As expected, family influence contributed significantly to

peer/romantic involvement (PRI) suggesting that family influence may have a significant

role in a child's desire for intimate relationships with others. Another unique contribution

of the current study was the inclusion of same sex attraction as a variable of PRI.

Although both family influence and school influence contributed significantly to SB, their

degree of influence was different. That is, a stronger relationship existed between school

influence and SB than between family influence and SB, suggesting that teacher fairness

may be influential in a child's feeling a sense of belonging at school.

The differential relationships between family and school influences as predictors of

SB and PRI can be explained in several possible ways. First, statistics may account for the

different pathway loadings. For example, family influence was defined by eight MVs, and

school influence was defined by two MVs. Thus, it is possible that the MVs contributing

to family influence were minimally related to one another. Alternately, it is possible that

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the relationship between SI and SB was strengthened by the latent construct being defined by two MVs. Second, non-statistical explanations for the obtained findings may exist. For example, it may be that school influences do indeed affect school belonging more than family influences.

The fact that neither family influence nor school influence contributed significantly to extracurricular participation was unexpected. Initially, extracurricular participation was divided into two manifest variables, academic clubs and athletic teams. However, the initial factor analyses revealed that the items loaded onto four distinct factors, thereby forcing the items into four manifest variables. One potential explanation is that extracurricular participation may be influenced more by the adolescent's future aspirations than early family influence. Alternately, although a four factor solution appeared to work more effectively than a five factor solution, it may be that a more appropriate factor solution (e.g. 3, 6, 9) would yield stronger results. Nonetheless, analysis of the current model revealed that family and school influences were not significant contributors to the adolescents' participation in school related activities.

The current results indicated that the model may be interpreted as a moderate to weak fit of the data. As noted, the chi-square and model chi-square obtained for this model were exceptionally high, indicating that the current model was not a good fit for the data. However, large data sets often yield higher chi-square values. Nevertheless, the current values were much higher than preferred for a good fitting model. Similarly, the goodness of fit indices, including the Bentler-Bonett Normed Fit Index (BBNFI = 0.766), the Bentler-Bonett Nonnormed Fit Index (BBNNFI = 0.750), the Comparative Fit Index

(CFI = 0.783), and the Robust Comparative Fit Index (RCFI = 0.733) suggested that the model may not be a good fit. However, it should be noted that most of the hypothesized relationships between the latent constructs were considered significant and that low to moderate fit indices may indicate the existence of other plausible, untested models rather than indicating a poor model. Although the manifest variables and the individual items used in the final analyses were correlated at .30 or greater, future researchers might improve upon the goodness of fit of the model by using more restrictive correlative cutoffs.

Nonetheless, the question remains regarding what steps may be taken to improve the existing model. Several aspects of the current project may have contributed to the relatively weak fit of the model; if these aspects were changed, an improved fit might result. First, the current project was based upon an existing data set. Although use of the existing data set permitted the researcher to assess a large sample, some ambiguity remained as to whether or not social interest was actually being measured. Thus, future studies may improve upon this model by using an accepted measure of social interest for adolescents.

A second area for improvement entails the specification of the model. Constructs such as family influence and school influence may be too broad to capture "causal" relationships. For example, although family influence was defined by eight different manifest variables, it might be that even this was too few to fully describe all the important aspects of a family. Conversely, although school influence as a construct was relatively

broad, within this data sample, it was restrictively defined. Thus, describing more aspects of the school experience may contribute to a stronger latent construct of school influence.

A third limitation of the present study was the use of a sample with ages ranging from 12 years to 19 years. Some of the participants were likely at different developmental stages and thus may have placed less or more emphasis on the expressed variables of social interest. Although goodness of fit indices for the current study were not strongly affected by age differences, future researchers may improve upon this study by specifying structural equation models for different ages.

Despite the fact that the existing model needs considerable respecification, the results may nonetheless prove helpful for counselors adhering to a variety of theoretical orientations who believe that social interest is an integral part of mental health. Adlerian counselors have long supported the contention that the family constellation influences a child's subsequent sense of belonging. Additionally, Adlerians have suggested that a home environment that consists of parental warmth and democratic values facilitates a child's development of empathy, a component of social interest (Buda, 1981). In a study conducted by Chandler (1986), adults' perceptions of their early childhood experiences were significantly related to social interest levels, thereby indicating an apparent relationship between perceived early childhood experiences and social interest levels. The study herein provided empirical support of these claims as indicated by the relationship between FI and two potential expressed measures of adolescent social interest, SB and PRI.

Results indicating a significant relationship between school influence and school belonging suggested that teachers who are perceived as fair by their students might influence children's felt sense of belonging in school. Providing teachers with information on how to promote fairness, equality, and democratic values in the classroom may prove helpful in facilitating social interest in adolescent students.

Finally, much can be done to improve the way that life tasks are viewed for the adolescent. Individual Psychologists have identified three life tasks: Work, social, and love. For adolescents, the life tasks may need to be adapted. For this study, the expression of social interest was measured by school belonging, extracurricular participation, and peer/romantic involvement. Future studies may improve upon this research by using an existing measure of social interest that has criterion validity. Additional research is also needed to identify more specifically how social interest may be expressed in the adolescent population.

APPENDIX A

TABLES

Table 1

<u>Latent Variables, Manifest Variables, and Items</u> (All items are youth report unless otherwise specified)

Latent Variables	Observed/Manifest Variables	Items
Family Influence	**1. Number of children from bio parents**	
	2. Birth order	
	3. Live w/ bio mom	
	4. Live w/ bio dad	
	5. Get along with adolescent	
	6.Close to parents, youth report	1.Mom warm and loving
		2.Mom encourages independence
		3.Mom discusses ethics
		4.Mom good relationship
		5.Dad warm and loving
		6.Dad, good relationship
		7.Mom how much does she care
		8.Close to mom
		9.Close to dad
		10.Dad how much does he care
		11.Feel loved and wanted
		12.Parents care about you
		13.Does mother care about you
		14.Does father care about you
		15.Feel socially accepted
		16.Family understands you
		17.Family has fun together
		18.Family pays attention to you

7.Living conditions/ neighborhood-youth report

1.Description of dwelling unit
2.Condition of dwelling unit
3.Condition of neighborhood buildings
4.Concern for Safety
5.Feel safe in neighborhood (home interview)
6.How happy living in neighborhood
7.Feels safe in neighborhood (adolescent)

8.Living conditions/ neighborhood-parent report

1.Neighborhood, less crime
2.Neighborhood, near friends

9.Decision making-youth report

1.Make own decision about friends
2.Make own decision about clothing

10.Communication with parents- youth report

1.Residential mom- talked about life
2.Residential mom- discuss personal problem
3.Residential mom- talked about school grades
4.Residential mom- worked on school project
5.Residential mom- talked about school (other)
6.Residential dad- talked about life
7.Residential dad- discuss personal problem
8.Residential dad- talked about school grades
9.Residential dad- worked on school project
10.Residential dad- talked about school (other)
11.Mom-good communication
12.Dad-good communication

11.Parental membership- parent report

1.Member- parent-teacher organization
2.Member- Military veterans organization
3.Member- Labor union
4.Member- Hobby/sports group
5.Member- Civic/Social Organization

12.Close to adolescent- parent report

1. Does not understand adolescent
2.Feel you can trust adolescent
3.Talk with adolescent about impact on social life
4.Talked with adolescent about moral issues

13.Communication with adolescent- parent report

1.Talk about grades with adolescent
2.Talk about other school activity with adolescent
3.Talk with teachers about adolescent

14.Religious participation-parent report

1.Religion
2.Religious Affiliation

15.Decision making- parent report

1.Make decisions together about adolescent's life

		2.Make own decision-clothing 3.Make own decision-friend
	16.Relationship quality-parent report	1.Rate relationship with partner 2.Fight with partner
School Influence		
	1.Adolescent is in school now **2.Currently in school** **3.Current Grade level (or last grade level)** **4.Teacher caring/fairness**	
		1. Teachers treat students fairly (home interview) 2.Teachers treat students fairly (adolescent) 3.Teachers care about you 4.Adults care about you
	5.Condition of school	1. Adolescent's school- safe place 2.Adolescent's school- good school 3.Neighborhood-better schools
	6.Gets along with others	1.Trouble getting along with teachers (home interview) 2.Trouble with other students (home interview) 3.Trouble getting along with teacher (adolescent) 4.Trouble with other students (adolescent)
School Belonging	**1.Close to others-youth report**	1. Feel close to people at your school 2.Feel part of your school 3.Feels close to people at school

		4.Feels part of school
		5.Feels socially accepted
		6.Feels loved and wanted
		7.Friends care about you
	2.School safety	
		1.Feels safe at school (home interview)
		2.Feel safe in your school (adolescent)
	3.School happiness	
		1.Happy at your school (home interview)
		2.Happy to be at this school (adolescent)
4.Extracurr. Participation	**1.Academic Clubs**	
		1. Book club
		2.Computer club
		3.Debate Team
		4.Drama Club
		5.History Club
		6.Math Club
		7.Science Club
		8.Chorus or Choir
		9.Orchestra
		10.Future Farmers of America
		11.Honor Society
		12.Newspaper
		13.Yearbook
		14.Student council
		15.Other clubs or organizations
	2.Athletic Teams	
		1.Cheerleader/dance
		2.Baseball/ Softball
		3.Basketball

		4.Field hockey
		5.Football
		6.Ice hockey
		7.Soccer
		8.Swimming
		9.Tennis
		10.Track
		11.Volleyball
		12.Wrestling
		13.Other sport
5.<u>Peer/ Romantic Inv.</u>	**1.Romantic involvement**	
		1.Would like romance in next year
		2.Ever attracted to female-nonflag
		3.Ever attracted to male-nonflag
		4.In relationship-might tell partner I love them
		5.Adolescent has special girlfriend/boyfriend
	2.Participation with others	
		1.Times hang out with friends past week
		2.Past year-attend youth groups
		3.In relationship-might go out together in group
<u>Demographics, Etc.</u>		
	1.Important other variables	
		1.Are you adopted
		2.Respondent identifier number
		3.Biological sex
		4.Sex of respondent (parent)
		5.How old are you (parent)
		6.Sex of current partner

7.How old are you (adolescent)
8.What sex are you (adolescent)
9.What grade are you in (adolescent)

2.Parenting living arrangements

1.Lives with mother
2.Lives with father
3.Ever live with biological dad
4.Ever live with biological mom
5.Adolescent's biological mother lives in household
6.Did adolescent ever live with biological mother
7.Most recent year adolescent lived with biological mom
8.Did adolescent ever live with biological father
9. Most recent year adolescent lived with biological dad
10.Who acts as mother to you
11.Who acts as father to you
12.Live with biological parents
13.Adolescent's biological father lives in household.

3.Parent education

1.Education level of biological dad
2.Education level of biological mom
3.Residential dad-education level
4.Residential mom-education level
5.How far did mom go in school
6.How far did father go in school
7.Level of education

4.Total household income
5.Race

1.Race white
2.Race African American
3.Race American Indian
4.Race Asian
5.Race-other race

6.Candidness of respondent
7.How many people live in household?
8.People in grades 7-12 in household

Table 2

Final Latent Constructs, Manifest Variables, and Items

Latent Variables	Observed/Manifest variables	Items
Family Influence	**1. Relationship with dad**	1. Dad is warm and loving 2. Dad good relationship 3. Close to dad 4. Dad, how much does he care
	2. Relationship with mom	1. Mom is warm and loving 2. Mom encourages independence 3. Mom discusses ethics 4. Mom good relationship 5. Close to mom
	3. Close with mom and dad	1. Close to mom 2. Parents care about you 3. Does mother care about you 4. Does father care about you
	4. Communicate with youth on school	1. Residential mom talked about grades 2. Residential mom talked about school (other) 3. Residential dad talked about grades 4. Residential dad talked about school (other)

	5. Communicate with youth on personal life	1. Residential mom talked about life 2. Residential mom discusses personal problem 3. Residential dad talked about life 4. Residential dad discusses personal problem
	6. Relate with parent	1. Does not understand adolescent (PR) 2. Feel you can trust adolescent (PR) 3. Satisfied with relationship with adolescent (PR) 4. Relationship to adolescent (PR)
	7. Communicate with parents	1. Talk with adolescent about moral issues (PR) 2. Talk with adolescent about impact on social life (PR)
	8. Decision making	1. Make own decisions about friends 2. Make own decisions about clothing
School Influence	**1. Teacher fairness-home report**	1. Teachers treat students fairly
	2. Teacher fairness-school report	1. Teachers treat students fairly

School Belonging	**1. Close to others-home report**	1. Feels close to people at school 2. Feels socially accepted 3. Feels loved and wanted
	2. Close to others-school report	1. Feel close to people at school 2. Feel part of your school
	3. Happy at school	1. Happy at school
	4. Happy at this school	1. Happy at this school
Extracurricular Participation	**1. Academic 1**	1. German club 2. Computer club 3. Math club 4. Science club 5. Latin club 6. Book club 7. History club 8. Debate team

2. Academic 2

1. Chorus or choir
2. Drama club
3. Student council
4. Yearbook
5. Cheerleader/dance
6. Honor society
7. Newspaper
8. Other club or organization

3. Sport 1

1. Basketball
2. Baseball/softball
3. Football
4. Track

4. Sport 2

1. Field hockey
2. Ice hockey
3. Swimming
4. Tennis
5. Soccer

Peer/Romantic Involvement

1. Romantic involvement

1. Do you have a romantic relationship
2. Do you want a romantic relationship

2. Participation with others

1. Times hang out with friends past week
2. Past year, attend youth groups

Table 3

<u>Demographics</u>

Age of adolescent (N=2,561)	Count	Percentage	
12	71	2.77	
13	341	13.32	
14	411	16.05	
15	472	18.43	
16	495	19.33	
17	450	17.57	
18	302	11.79	
19	19	0.74	
Total Count	2,561	Total Percent	100.00

	Range	Mean	SD
Child's Age (Years)	12-19	15.418	1.687

Child's Gender	Count		Percent
Male	1,220		47.64
Female	1,341		52.36
Total Count	2,561	Total Percent	100.00

Child's Race	Count		Percent
White	1,688		65.91
African American	397		15.50
Native American	92		3.59
Asian American	133		5.19
Other	251		9.80
Total Count	2,561	Total Percent	100.00

Table 4

Descriptive Statistics of Manifest Variables

Manifest Variable	Mean	SD	Skewness	Kurtosis
Relationship with Dad	17.4494	2.7941	-1.5342	2.5597
Relationship with Mom	21.6818	3.0462	-1.3607	2.6330
Close to Mom/Dad	18.5900	2.6640	-2.3199	5.0905
Talks about school with adolescent	2.1894	1.5473	-0.1654	-1.4471
Talks with child about child's personal problems	1.2901	1.2477	0.6134	-0.6571
Relationship with parents	13.7462	2.3856	0.4716	3.0956
Comm-unication with parents	5.5705	1.9255	-0.3179	-0.9918

Manifest Variable	Mean	SD	Skewness	Kurtosis
Decision making (YR)	1.8028	0.4749	-2.4064	5.0653
Teacher Fairness (HR)	3.4678	1.1159	-0.5358	-0.3551
Teacher Fairness (SR)	3.5638	1.0398	-0.6300	-0.1690
Close to others (HR)	11.3838	2.4856	-0.8130	0.7701
Close to others (SR)	7.7903	1.7078	-0.9666	1.1063
Happy at your school	3.7962	1.0785	-0.8670	0.1808
Happy to be at this school	3.6224	1.2048	-0.6993	-0.3516
Academic 1	0.1792	0.6259	6.3609	58.2103
Academic 2	0.8622	1.1539	1.8345	4.8783
Sport 1	0.7380	0.9411	1.1922	0.8256
Sport 2	0.2378	0.5701	3.4633	17.6787

Manifest Variable	Mean	SD	Skewness	Kurtosis
Romantic Involvement	3.8204	1.2863	-0.1364	-0.4494
Participation with others	4.0308	1.6370	-0.0335	-0.5707

Table 5

Descriptives and Fit Indices

	Full SEM (n=2561)	Boys Only (n=1220)	Girls Only (n=1341)	Cauc. Only (n=1688)	Non-Cauc Only (n=803)	< 14 Only (n=823)	>14 Only (n=1738)
Multivariate Normalized Estimate	123.9123	81.9012	61.7777	102.4583	67.5378	63.1183	79.1435
Average Absolute Standardized Residual	0.0336	0.0387	0.0350	0.0356	0.0372	0.0348	0.0363
Average Off-diagonal Absolute Standardized Residual	0.0371	0.0424	0.0386	0.0394	0.0411	0.0385	0.0401
Model X^2	7605.022	3856.707	4421.407	5284.070	2532.479	2651.420	5026.150
Chi-Square	1776.297	990.478	81.9012	1274.391	683.987	642.076	1205.812
NFI	0.766	0.743	0.775	0.759	0.730	0.758	0.760
NNFI	0.750	0.741	0.776	0.749	0.745	0.777	0.752
CFI	0.783	0.775	0.806	0.782	0.778	0.806	0.785
RMSEA	0.062	0.064	0.060	0.063	0.060	0.059	0.060

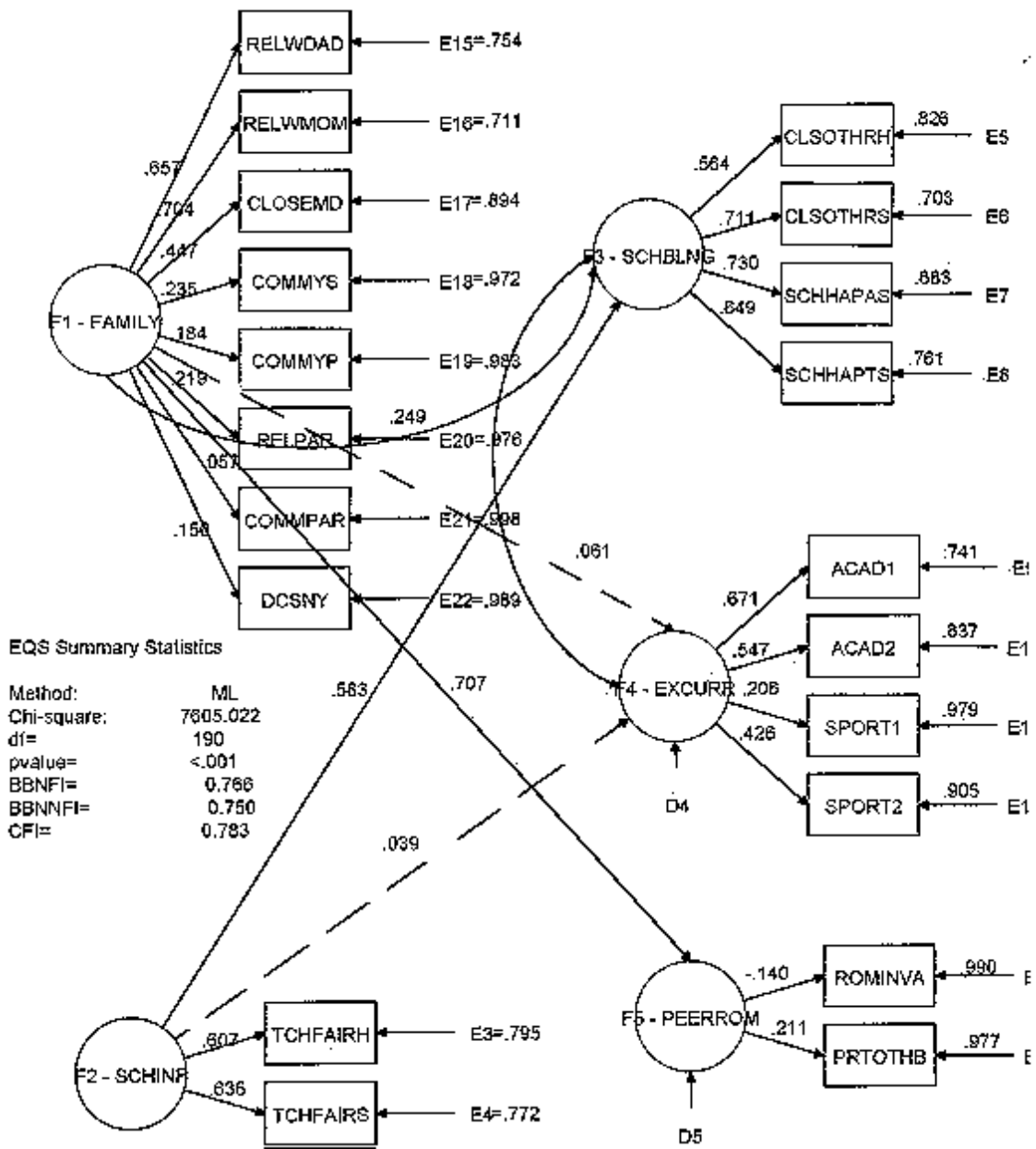Note: CFI=Comparative Fit Index; NFI= Bentler-Bonett Normed Fit Index; NNFI=Bentler-Bonett Non-Normed Fit Index; RMSEA=Root Mean Squared Error of App.

APPENDIX B

FIGURE

Figure Caption

Figure 1. Final SEM of adolescent social interest (ASI).

EQS Summary Statistics

Method:	ML
Chi-square:	7605.022
df=	190
pvalue=	<.001
BBNFI=	0.766
BBNNFI=	0.750
CFI=	0.783

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