

**SIBLINGS OF INDIVIDUALS WITH INTELLECTUAL DISABILITIES:  
PSYCHOLOGICAL FUNCTIONING AND SIBLING RELATIONSHIPS**

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**by**

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## Abstract

Individuals with intellectual disabilities have received an enormous amount of attention in the developmental literature. As more services become available for these individuals, research has shifted to examining their siblings. The family system perspective suggests the presence of a sibling with an intellectual disability should impact on the psychological development and functioning of the sibling without a disability. To investigate past and present sibling relationships and current psychological functioning, forty-four participants, twenty-two siblings of individuals with intellectual disabilities and twenty-two siblings of individuals without intellectual disabilities, completed the Adult Sibling Relationship Questionnaire, the Sibling Type Questionnaire, the College Adjustment Scale, the Family Environment Scale, and the Interpersonal Reactivity Scale. Results revealed differences between the psychological functioning, quality of child and adult sibling relationships, and familial functioning patterns of participants who had siblings with an intellectual disability and those who had siblings without an intellectual disability. Individuals who had siblings with intellectual disabilities had less criticism present in their childhood sibling relationship, less competition and conflict in their adult sibling relationships, higher self-esteem and lower anxiety than did participants who had siblings without disabilities. Participants who had siblings with intellectual disabilities reported more organization in their family than those who had siblings without disabilities. There was also a trend for more emphasis on moral-religious values in families where there was a sibling with an intellectual disability. In general, results reveal that having a sibling with an intellectual disability affects individuals' psychological functioning, familial environment, and sibling relationship.

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## Dedication

I dedicate this thesis to Krista and Costa who shared a unique and special sibling bond, and to their mother, who provided a tremendous amount of dedication and love to both her children. It was this special sibling dyad that sparked my interest in this area of research.

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## Introduction

### Sibling Relationships

Sibling relationships are an integral part of the family system. The term 'Sibling Relationship' refers to the total interactions of individuals who share common biological parents, including their knowledge, perceptions, attitudes, beliefs, and feelings regarding one another (Cicirelli, 1991). This definition can be expanded to include siblings who are not biologically related such as foster siblings, step-siblings, and adoptive siblings.

Because the sibling relationship is involuntary, it is expected to continue in some form throughout the duration of a lifetime. Studies have shown that most siblings continue to maintain some connection or relationship into adulthood (Cicirelli, 1991). Sibling relationships also tend to differ from other relationships, such as friendships, in frequency and amount of interaction, existence of ascribed roles, accessibility, and degree of common experiences (Bryant, 1982).

Researchers conceptualize sibling relations by the amount of "access" siblings have to each other (Bank & Kahn, 1982). Low-access siblings have the following characteristics: separated by more than eight or ten years, little shared time, space, or personal history, different schools, different friends, and exposure to different parenting styles. The familial history of these siblings is qualitatively different. In contrast, high-access siblings share much the same history. They are separated by few years and have high access to each other during the developmental years; they attended the same schools, played with the same friends, and shared each other's rooms and clothing. Although it is possible for siblings separated by more than ten years to be close, "high accessibility

during the developmentally formative years is the almost routine accompaniment of an influential sibling relationship” (Bank & Kahn, 1982, p. 10).

Brothers and sisters can be a tremendous source of companionship, strength and emotional support (Furman & Buhrmester, 1985). Although siblings have a profound impact on individuals’ lives, studies have shown that the nature of the impact varies considerably. There is a wide range in the quality of sibling relations; siblings can be close or distant, egalitarian or asymmetrical, harmonious or conflicted, and cooperative or competitive (Furman & Buhrmester, 1985). Some siblings provide support, help, and friendship, while others encourage antisocial behavior and maladjustment (Newman, 1994). Sibling relationships are often considered paradoxical, incorporating both conflict and companionship. This paradoxical relationship varies throughout the three major developmental periods (Newman, 1994); childhood and adolescence, early and middle adulthood, and old-age (Goetting, 1986).

In each life stage, there is a unique pattern of interaction and quality to sibling relations. The sibling relationship is thought to be most intense in childhood and adolescence because of the daily contact and the critical role siblings play in each others’ lives. Because of the constant interaction and the amount of time siblings spend together, this daily contact may also explain why sibling rivalry is so intense during the early years (Bedford, 1989). Throughout childhood, siblings who are similar in age spend time together as playmates and friends, even more so if same-age friends are limited or not available. Same-sex siblings, for example, exhibit more pro-social behaviors than different sex siblings (Goetting, 1986). In adolescence, many siblings are thought to remain close because of the sensitive issues adolescents face (Goetting, 1986).

Adolescents frequently have difficulty communicating with parents at this time and their siblings may provide consistent support. The adolescent sibling relationship is characterized by companionship and emotional support, caretaking activities particularly for female siblings, and various other services, such as forming coalitions for dealing with parents and compensating for parental inefficiency (Goetting, 1986). The companionship that characterizes the sibling relationship in later years is thought to be formed during childhood and adolescence (Connidis, 1989a; Goetting, 1986).

Although researchers have examined siblings throughout the lifespan, considerably less research has been conducted during early and middle adulthood (Stewart, Verbrugge, & Beilfuss, 1998a). The available evidence suggests siblings continue to provide companionship and emotional support, albeit to a lesser extent than in childhood and adolescence (Goetting, 1986). During early and middle adulthood, sibling contact becomes more voluntary and the relationship may become more diffused (Goetting, 1986). The sibling relationship in adulthood can be less expressive than childhood and adolescence given siblings are preoccupied with their own lives and families. The amount of contact between adult siblings varies greatly. This contact is affected by factors such as proximity, age, health, income level, and availability of transportation (Goetting, 1986). The intensity of the sibling relationship is indicated by frequencies of visits, telephone calls, and letters. Adult siblings may also be connected through efforts to care for elderly parents.

In late adulthood, the sibling relationship may be characterized by greater closeness and compatibility than in young and middle adulthood. Because of changing demographics such as divorce, small family size, and childlessness, sibling relationships

in later life are expected to be stronger (Connidis, 1989b). At this stage, people may be less involved in their own immediate families and there may be more time to rekindle the sibling relationship (Goetting, 1986). Factors such as geographical proximity and the gender of the siblings also play an important role in the sibling relationship (Connidis, 1989b). Siblings who live close together see each other more frequently. Sisters see each other more often, speak more on the telephone, and discuss important issues more frequently than either brothers or brother-sister dyads (Connidis, 1989b). An important aspect of the sibling relationship later in life is social support. White and Riedmann (1992) found that social support was higher among persons with living sisters and those without adult children. Along with providing companionship and support, siblings are now in a position to reminisce and resolve sibling rivalries. In late adulthood, the sibling relationship once again becomes intense (Goetting, 1986).

Factors Affecting Sibling Relationships. To determine factors that influence the nature of adult sibling relationships, Pulakos (1990) conducted a study of 63 male and 44 female young adults with siblings. Women reported their sibling relationships as more important and also reported writing to all of their siblings more frequently than did men. Participants from all-female families reported the closest relationships; those from all-male families were the least close. Whether the family consisted of biological or step/half siblings (blended families) also had an effect on the sibling relationship. Siblings from biological families had more frequent telephone contact with their closest or only sibling and felt closer to all their siblings than siblings from blended families (Pulakos, 1990). The perceived cohesiveness of the family was positively related to how close the participants felt to their siblings.

Other factors thought to impact upon adult sibling relationships include: smaller family sizes, longer life-spans, geographic mobility, and maternal employment. Smaller family sizes increase the likelihood siblings will become close. Because today's siblings are closer in age, there is greater likelihood that siblings will have a more intense relationship than in the past (Bank & Kahn, 1982). Longer life spans increase the chances that siblings will be supportive of each other later in life when spouses die and children disperse (Bank & Kahn, 1982; Connidis, 1989). Given increased maternal employment rates, children often spend more time together unsupervised (Bank & Kahn, 1982). The mobility of present day jobs increases the likelihood that friends, schools, teachers, and location may change frequently. Siblings become the stable element in a child's life and someone they can turn to in times of turmoil (Bank & Kahn, 1982).

The Sibling Bond. Given a history of shared familial experiences, siblings possess a unique and special bond. The sibling bond elicits emotions ranging from warm and positive feelings for some to cold and negative feelings for others. The sibling bond is defined as "a connection between the selves, at both the intimate and public levels, of two siblings; it is fitting together of two peoples' identities" (Bank & Kahn, 1982, p. 15). Various researchers have found different areas of influence on the sibling bond. The personality of the siblings, biological changes such as adolescence, and larger contexts such as ethnicity, social class, religion or economic factors can all affect the sibling bond in unique ways (Bank & Kahn, 1982).

Studies have shown that the quality of the sibling bond is affected across three dimensions: the characteristics of the sibship, the characteristics of the sibling's inner circle, and the characteristics of the sibling (White & Riedmann, 1992). Characteristics of

the sibship shown to affect exchanges among adult siblings include gender, physical proximity, and age structure. Sister-sister relationships tend to be stronger than brother-brother or brother-sister relationships. Physical proximity is thought to be important in all gender patterns of relationships. The closer the ages of the siblings, the stronger the bond (Bank & Kahn, 1982). Characteristics of the sibling's inner circle that affect the sibling bond include familial aspects; siblings who lack living parents, children, or spouses tend to have a stronger sibling bond. Characteristics of the sibling that can affect the bond include social class, sex, and age. Kinships are thought to be less prominent with increasing social class. Women are thought to engage in intimate relationships with their siblings and family more frequently than men (White & Riedmann, 1992). Sibling contact in the middle years is less prominent given siblings' own marriage and child-care responsibilities. It is thought that the sibling relationship peaks between the ages of 45 and 54 (White & Riedmann, 1992).

Approaches to Studying Sibling Relationships. There have been two approaches to studying sibling relationships: describing particular dimensions or qualities of the relationship and identifying types of sibling relationships (Cicirelli, 1991). The two most commonly explored dimensions or qualities are Closeness and Sibling Rivalry. Adult siblings tend to view their relationships as 'close' or 'very close', with the greatest degree of closeness occurring among sisters (Cicirelli, 1991). Closeness is thought to be higher for narrowly age-spaced, same-sex dyads than for narrowly-spaced, opposite-sex dyads (Stewart et al., 1998a). Floyd (1995) argued that although previous research has found that females have a closer relationship than males, the concept of closeness has always been measured by self-disclosure. Floyd (1995) found that men manifest their closeness



in different ways than women. Even though women self-disclosed more frequently than men, males were more likely to show their closeness in terms of shaking hands, drinking together, and talking about sexual issues. It may also be inaccurate to conclude that because females self-disclose more, they share closer relationships. Sibling closeness may be seen as a form of dependability in terms of instrumental help and relying on the sibling. In the Floyd (1995) study, closeness with one's best friend was defined as 'shared interest' although the participants did not rate their closeness higher in the relationship with their friend versus their sibling.

Closeness to one's sibling varies throughout the life-span. In a cross-sectional study, Ross and Milgram (1982) studied a sample of 75 adults from 22 to 93 years of age to assess events and dynamics of adult sibling relationships. During young to middle adulthood, closeness decreased because familial concerns took precedence over sibling contact. Most young and middle adult siblings, nonetheless, indicated their families and siblings were close. Older participants tended to view their siblings as 'kin' whereas younger participants viewed them more as friends. The best predictor of closeness was positive childhood experiences. Feelings of closeness with one's sibling came from childhood familial experiences with an emphasis on family unity. Shared family unity was linked to the absence of favoritism, parental recognition of individual talents and accomplishments, and parents teaching children strategies for positive interactions (Ross & Milgram, 1982). Shared activities, such as study, work and recreation, and shared proximity also predicted close relationships among siblings, as did age-spacing, sex, personality characteristics, and family size. Few participants established closeness to their sibling for the first time as adults.

The second most commonly explored dimension of quality, sibling rivalry, tends to decrease with age and is most prominent among brothers and least prominent among cross-sex siblings. Given the close daily contact and lack of maturity in younger years, it is not surprising that more rivalry and conflict are evident in childhood (Bedford, 1989). Rivalry tends to be reported more often by younger siblings, especially in large, widely-spaced families (Stewart et al, 1998a). Sibling rivalry seems to be relatively low in adulthood (Cicirelli, 1991; Connidis, 1989). As individuals progress toward young adulthood, their relationships with their siblings tend to become warmer and less conflictual (Stewart et al., 1998a).

In a study designed to explore the origins of sibling rivalry, Ross and Milgram (1982) found that the rivalry originated from both parental and sibling behaviors. Rivalry originating from parents was expressed both overtly by parents directly comparing the siblings, and covertly by differential treatment of one sibling. Rivalry generated by the sibling was most often perceived as being initiated by a male sibling. Rivalry in adulthood was maintained through parental favoritism, competitive behaviors, feelings of exclusion from family interactions, maintenance of assigned roles/labels, and a lack of communication relating to the rivalry (Ross & Milgram, 1982).

The second approach to studying sibling connections is the identification of types of sibling relationships. Types of sibling relationships that have emerged for siblings aged 65 years and older include intimacy, congeniality, loyalty, apathy, and hostility (Gold, 1989). These typologies are based on patterns of psychological involvement, closeness, acceptance/approval, emotional support, instrumental support, contact, envy, and resentment (Cicirelli, 1991). The intimate type is characterized by devotion and

closeness; congeniality is typified by friendship and caring; loyalty is characterized by allegiance based on familial background; apathy by indifference; and hostility by resentment, anger, and enmity. Although typologies are useful, they risk overgeneralizing the relationship when characteristics of the type are uncritically applied to all individuals (Cicirelli, 1991).

At the other end of the developmental spectrum, Murphy (as cited in Stewart et al., 1998a) has developed a typology for children five to eleven years of age. This typology categorized sibling relationships into Caretaker, Buddy, or Casual. The sibling relationship referred to as Caretaker involves the older sibling as a quasi-parent, participating in such activities as feeding and dressing their sibling. The second category, Buddy, involves the older child as friend and teacher of childhood mischievous tricks, and as an ally against the parents (Stewart, et al., 1998a). Finally, the relationship characterized as Casual implied that the older child is uninterested in the sibling.

In an attempt to combine these two approaches, Stewart et al. (1998a), asked 267 adult participants to complete Murphy's retrospective questionnaire concerning their childhood relationship with their closest-in-age sibling. Participants also completed a questionnaire regarding their current sibling relationship in terms of warmth, conflict, and rivalry. The purpose of the study was to provide an initial step towards determining if a typology of sibling relationships during the late adolescent and early to middle adult years can be established (Stewart, et al., 1998a). If a common profile of sibling relationship could be established, then researchers could begin to apply a standard classification system to sibling relationships across the developmental lifespan.

A four-part typology emerged using this retrospective methodology: Caretaker, Buddy, Casual, and Unresolved. Respondents who experienced either Caretaker or Buddy patterns as children had warmer relationships with their siblings as adults than either the Casual or Unresolved. Those siblings who fell into the Caretaker or Buddy relationships reported higher warmth scores on each of the nine variables of the warmth scale, whereas those from the Casual reported the lowest scores on those scales. Participants in the Buddy category reported higher levels of instrumental and emotional support, frequent close contact, and less interpersonal rivalry. The Unresolved scored somewhat between those two extremes (Stewart, et al., 1998a). The Unresolved category included individuals whose scores were relatively low in each of the separate typologies, fluctuating between the other three categories. As a result, the researchers dubbed them 'Unresolved' until further research can differentiate the observed pattern of sibling interactions.

With respect to age, respondents who were older than their siblings reported higher overall conflict. They reported higher levels of quarreling, antagonism, and dominance. Respondents who were older and in the Casual relationship type reported more overall levels of Rivalry. Older siblings who had Casual relationships reported higher levels of maternal partiality (i.e. favoritism), whereas younger siblings who fell into the Caretaker category reported higher levels, indicating the older sibling was favored. Male participants reported higher competition scores but lower scores on both the antagonism and dominance measures than females. Male-male dyads were the most competitive combinations.

In a later study, Stewart, Beilfuss, Verbrugge, Kozak, and Tingley (1998b) attempted to develop two new measures to classify sibling relationships. Three hundred

and thirty six participants provided either retrospective descriptions of their past sibling relationships or descriptions of their current relationships with their closest-in-age sibling using questions designed to tap Murphy's (as cited in Stewart et al., 1998b) Caregiver, Buddy, and Casual types, Gold's (1989) Intimate, Congenial, Loyal, Apathetic and Hostile types, and any other characteristics that either Murphy or Gold had not considered.

Factor analysis revealed five dimensions for past sibling relationships, dubbed the 'Then' component of the relationship: Mutuality, Criticism, Support, Parenting, and Imitation. Mutuality refers to level of acceptance, affection, similarity, and reciprocity experienced by the siblings. The content of this typology is similar to the 'Buddy' category of Murphy (as cited in Stewart et al., 1998a). The second dimension, Criticism, refers to the degree of dominance, antagonism, and quarreling in the relationship. Given the content of this dimension, Stewart, et al. (1998b) conceptualize this factor as similar to sibling rivalry. The third factor, Support, describes the level of interpersonal sensitivity, responsiveness, admiration, and instrumental or emotional support in the relationship. The fourth factor, Parenting, similar to Murphy's Caregiver typology, describes the degree to which one member of the sibling dyad had responsibility and enjoyed providing care for the other. Finally, Imitation reveals an intention to mimic the actions, interests, or behaviors of the other sibling (Stewart et al., 1998b).

The 'Now' component, or the current sibling relationship also consisted of five factors: Mutuality, Criticism, Apathy, Competition, and Longing. The descriptions of Mutuality and Criticism are similar to the explanations above. Stewart, et al., (1998b) stated that this overlap in the first two typologies from childhood to adulthood may

represent the primary dimensions of sibling relationships while the remaining three factors are useful in describing particular aspects of the relationship at specific phases of life. Apathy describes the low levels of interpersonal similarity, affection, or interpersonal contact found in the relationship. Competition describes the degree to which one member of the dyad strives to outperform or feels envious of the other. The final typology, Longing, refers to respondents yearning for the return of something lost or the attainment of something unfulfilled or beyond reach concerning their sibling.

Sibling Relationship and the Family. It is important to ascertain the placement of a sibling within the familial context: birth order, age-spacing, sex, and age. Previous research on childhood sibling relationships has focussed on these variables, yet for various reasons, researchers seem to have ignored the impact of these variables as siblings become older (Cicirelli, 1991). The sibling relationship takes place in the context of the family system and the society at large. Family System theory postulates that there are three subsystems in a family: spousal subsystem, parent-child subsystem and sibling subsystem. What happens within any subsystem ultimately affects and is affected by events and circumstances within the other subsystems. The sibling subsystem or relationship evolves over time as members of the family are born or die and as individual roles change (Cicirelli, 1991).

Unlike siblings of the past, modern siblings have a greater freedom to be involved or not to be involved with each other. Cultural continuity or financial success no longer depends on the closeness of the siblings; siblings can choose whether they wish to maintain a relationship. Bank and Kahn (1982) state that this may be true unless there is a traumatic loss or family hardship. Having a sibling with intellectual disabilities may be

categorized as a family hardship and may bond the siblings together more strongly than if there are no siblings with intellectual disabilities.

### Siblings of Children with Intellectual Disabilities

Children with intellectual disabilities have received an enormous amount of attention in the literature (for reviews see Simonoff, Bolton, & Rutter, 1996; Szymanski, Ludwick, & Stark, 1996; Wolf & Enid, 1996). The term 'special needs' has been used in many different contexts and has included individuals with various disabilities including physical, mental, and psychological problems. Although mental retardation is a subset of the more global concepts 'special needs' and 'disabilities', in the context of this research, it will be used synonymously with these terms. Due to the negative connotation of the term 'mental retardation', where possible, the term 'intellectual disabilities' will be used to denote the psychological diagnosis of mental retardation. Early studies addressed various issues with respect to these children's psychological, emotional, and behavioral well-being. As more services became available for these children with intellectual disabilities, research shifted to examining the families of these children. Most recently, investigators have studied the siblings of children with intellectual disabilities in an effort to assess the sibling's psychological well-being (Andersson, 1988; Auletta & DeRosa, 1991; Bagenholm & Gillberg, 1991; Bischoff & Tingstrom, 1991; Cuskelly & Gunn, 1993; Gold, 1993; McHale & Gamble, 1989; Rodrigue, Geffken, & Morgan, 1993).

Research has focused on the consequences of having a sibling with intellectual disabilities to determine if the impact on the normal sibling is negative or positive. Some studies have shown negative consequences such as increased caregiving time, depression, loneliness, behavioral problems, and low self-esteem (Andersson, 1988; Bagenholm &

Gillberg, 1991; Cuskelly & Gunn, 1993; McHale & Gamble, 1989; Rodrigue et al., 1993), while other studies have failed to find any difference between siblings of children with intellectual disabilities and siblings without disabilities (Auletta & DeRosa, 1991; Bischoff & Tingstrom, 1991). Positive and negative consequences of having a sibling with intellectual disabilities fall within one of three broad categories: Sibling caregiving, psychological well-being, and the quality of the sibling relationship (Boyce & Barnett, 1993). There has also been research conducted on the effects of status variables (such as birth-order and age-spacing) on siblings of children with intellectual disabilities. What follows is a review of the literature within these broad categories for both childhood and adult siblings of individuals with intellectual disabilities.

Sibling Caregiving. A great deal of attention has been focused on the extended time a sibling with intellectual disabilities spends in caregiving activities. These unique relationships include a greater frequency of caregiving, teaching, and dominant behaviors than do the relationships of non-handicapped siblings (Boyce & Barnett, 1993). Bagenholm and Gillberg (1991) found that siblings of both individuals with autism and intellectual disabilities felt they worked more often around the home than did siblings of the non-disabled children. McHale and Gamble (1989) studied 62 children between the ages of 8 and 14, half of whom had siblings with intellectual disabilities and half of whom had non-disabled siblings. Evaluations were conducted using children's ratings and maternal ratings taken from both home and telephone interviews. The researchers found that the siblings of children with intellectual disabilities spent more time in caregiving activities but did not have more overall contact with their disabled brother or sister. When the sibling did not have disabilities, females spent more time caregiving than



males. When there was a sibling with intellectual disabilities, males and females spent an equivalent amount of time in caregiving situations (McHale & Gamble, 1989). In the same vein, Stoneman, Brody, Davis, and Crapps (1988) reported that the siblings of children with intellectual disabilities had multiple care-taking roles compared to matched siblings of nonhandicapped individuals. Sisters, in particular, had more caretaking roles. These increased responsibilities were associated with increased sibling conflict and decreased opportunity for peer contact and extra-familial activities (Stoneman, Brody, Davis & Crapps, 1988).

Direct observation provides another method for studying the effects of having a sibling with intellectual disabilities. Brody, Stoneman, Davis, and Crapps (1991) observed children with intellectual disabilities and their siblings in three naturally occurring in-home contexts; playing with toys, television viewing, and snacking. The younger siblings of children with intellectual disabilities assumed a more dominant role than in non-disabled sibling dyads. These dominant roles included helping, teaching, and behavior management, a phenomenon coined "role crossover." O'Connor and Stachowiak (1971) concluded that when one of the children has intellectual disabilities, the "youngest sib" role is assigned to the handicapped child by the non-handicapped child or children.

Stoneman, Brody, Davis, and Crapps (1987) observed thirty-two same sex sibling pairs, 16 of which had one child with intellectual disabilities. Role asymmetries were consistently found among siblings dyads when one of the siblings had intellectual disabilities. Older siblings were more likely to play a dominant role in the relationship. In a subsequent study, these researchers found that older siblings of children with intellectual disabilities, particularly older sisters, assumed some caretaking

responsibilities for their siblings. These responsibilities were associated with sibling conflict and decreased opportunities for non-familial activities as compared to siblings of children without intellectual disabilities.

Psychological Well-Being. Various researchers have examined the sibling relationship in terms of the effects having a sibling with an intellectual disability has on the psychological well-being of the non-disabled sibling. Findings are contradictory.

Andersson (1988), by applying a sociometry technique that had a respondent choose a member of his or her group for inclusion in a specific activity, concluded that siblings of children with intellectual disabilities were more socially isolated than siblings of non-disabled children. Siblings of children with intellectual disabilities also chose solitary extracurricular activities, such as reading, more often than comparison siblings. Dyson (1989) found that siblings of children with intellectual disabilities participated less frequently in extracurricular activities. Bagenholm and Gillberg (1991) reported siblings of children with intellectual disabilities are more lonely than those with non-disabled siblings.

McHale and Gamble (1989) found that siblings of children with intellectual disabilities scored higher on measures of depression and anxiety, and scored lower on measures of social acceptance and conduct. Cuskelly and Gunn (1993) identified more conduct problems in female siblings of children with Down Syndrome. To the contrary, through child and parent surveys, Gold (1993) did not find any differences in social adjustment between siblings of autistic children and siblings of non-disabled children. No other significant differences in adjustment between siblings of handicapped and non-handicapped individuals were reported. Rodrigue et al., (1993) concluded siblings of

autistic children do experience more internalizing and externalizing behavioral problems than siblings of children with Down Syndrome and typically developing children. For the siblings of children with autism, age of sibling and parental marital satisfaction were associated with psychological functioning; older siblings experienced more externalizing and internalizing problems and marital satisfaction was associated with increased self-esteem.

Through parental reports, Fisman et al. (1996) found evidence for an increased risk of externalizing and internalizing behaviors in siblings of children with Pervasive Developmental Disorder (PDD), as compared to siblings of children with Down Syndrome and siblings of children without intellectual disabilities. Teacher reports also revealed higher incidence of internalizing problems in siblings of individuals with PDD. In contrast, Gath (1972) did not find any difference in the behavioral problems of siblings of children with Down Syndrome, Cleft Lip, or siblings of children without special needs. Bischoff and Tingstrom (1991) also failed to find differences between siblings of children with and without special needs with respect to behavior problems, social competence, or self-esteem.

Among adolescent siblings of individuals profoundly mentally retarded, Auletta and DeRosa (1991) did not find any greater psychosocial adjustment difficulties in comparison to an age-matched control sample. The adolescent sibling scores on self-concept measures were not significantly different from the control group. Dyson and Fewell (1989) studied the self-concept of siblings of children with intellectual disabilities, both in Canada and the United States, and found that the self-concepts of these individuals were similar in both countries. Indeed, male siblings of children with

intellectual disabilities had higher scores on a self-concept measure than did males of children without disabilities.

In an attempt to determine why some studies have found negative consequences of having a sibling with intellectual disabilities and other studies have reported positive results, Lynch, Fay, Funk and Nagel (1993) investigated family variables that might place siblings at greater risk. No differences existed between siblings with intellectual disabilities and those without disabilities in family adjustment. Family dimension scores that included perceptions of the family relationship, personal growth, organization, and control dimensions also did not differ between the two groups. Family cohesion was related to self-concept scores in both groups; closeness, mutual support, encouragement of independence, and self-reliance influenced the child's self-concept positively. Family conflict tended to be more important when there was a child with intellectual disabilities. When there was a child with intellectual disabilities in the family and the family was disorganized, siblings had lower self-concept scores than did controls.

Dyson, Edgar and Crnic (1989) found factors such as parental stress and resources, perceived family social support, family relationships, family's emphasis on personal growth, and maintenance of family system impacted on children's adjustment for siblings of children with and without intellectual disabilities. For children of siblings without intellectual disabilities, the familial attributes affected only the self-concept of the siblings. In contrast, the familial attributes affected siblings of children with intellectual disabilities in all aspects of adjustment, self-concept, behavior problems, and social competence. It seems that in families where there is a child with special needs, familial attributes affect various facets of the non-disabled siblings' lives.

An important area of research has been the study of the effects of status variables, such as age, birth-order, age-spacing, and sex on the psychological functioning of the sibling of a child with disabilities. Most studies have not found any relationship between demographic variables and psychological well-being of siblings of children with special needs. For example, Senel and Akkok (1996) found that sex, family-size, and education level did not influence the stress levels of siblings of children with disabilities. Similarly, McHale, Sloan, and Simeonsson (1986) found no significant birth-order or sex effects. Instead, these researchers found that specific problem areas were associated with the quality of the sibling relationships such as perception of favoritism, coping ability, and concerns about the handicapped child's future.

Dyson (1989) studied the adjustment of 110 older siblings (aged 7 1/2 to 15 years) of children under the age of 7 with and without disabilities. Type of handicap, age of the handicapped child, age-spacing, family size, and mother's education were significant moderators. Siblings of children with intellectual disabilities showed better behavior adjustment, higher self-concept, and more social competence than siblings of children with physical or sensory handicaps. Age of the handicapped child and the age-spacing between the handicapped child and his/her sibling were important. There were more behavioral problems evident when the handicapped child was older and when the age gap was smaller. Family size and maternal education were also related to adjustment; higher education levels and greater family size predicted better social competence for the sibling.

In a large-scale study by Breslau (1982), 237 siblings of disabled and 248 siblings of nondisabled individuals were studied. Younger male siblings and those closer in age to their disabled sibling scored higher on psychological impairment than did older male

siblings. In contrast, younger female siblings scored better on measures of psychological adjustment. Age-spacing was not a significant predictor of psychological adjustment in females. With respect to age-spacing effects, the siblings tended to demonstrate more problems when they were closer in age; males seemed to demonstrate interpersonal aggression and females experienced depressive-anxious feelings. No significant age-spacing effects were found in the nondisabled sibling group.

Quality of the Sibling Relationship. An area where researchers are beginning to focus more efforts on is the impact that having a sibling with intellectual disabilities has on the quality of the sibling relationship. Bagenholm and Gillberg (1991) utilized three groups of children and young adults from the ages of 5 to 20 matched for sex, birth-order and socioeconomic status: those who had siblings with intellectual disabilities, siblings with autism, and siblings without disabilities. Children were interviewed about issues concerning the sibling relationship. Siblings of children with autism were more negative with respect to their perceptions of the sibling relationship compared to siblings of children with intellectual disabilities and non-disabled children, and seemed to have more problems with their siblings. Siblings of children with intellectual disabilities played with their siblings more often than siblings of autistic and non-disabled children.

Roeyers and Mycke (1995) questioned children aged 8 - 15 about their sibling relationships. Siblings consisted of children with intellectual disabilities, autism, and those without disabilities. Children of siblings with a disability rated their relationship more positively than did the non-disabled siblings and scored higher on a measure of acceptance of their brother or sister. Children with nondisabled siblings reported more verbal aggression than those with intellectual disabilities. Among children whose siblings

had autism, there was a positive association between the knowledge of the disorder and quality of their relationship. Participants were asked to report the number of stressors they experienced as a result of their sibling, such as the amount of weird or strange behavior the sibling exhibits. The more stress these children reported as a result of their sibling's disability, the less positively they perceived their sibling relationship.

Summary. Research on siblings of children with intellectual disabilities has mainly focused on caregiving activities, psychological well-being and the quality of the sibling relationships. These studies have revealed that siblings of children with intellectual disabilities spend more time in caregiving activities. The findings on the psychological well-being of these siblings, however, are mixed. Some studies have shown positive results while others have shown negative results. A somewhat neglected area of research has been the quality of the sibling relationship. The few studies that have been conducted suggest that children who have siblings with intellectual disabilities have more interaction with their siblings and rate their relationship more positively than those who have siblings without disabilities.

#### Adult Studies of Siblings of Individuals with Intellectual Disabilities

Most studies examining the siblings of those with intellectual disabilities have focused on children. There have been very few methodologically-sound studies assessing the psychological well-being or sibling relationship of adults of siblings with intellectual disabilities. Most studies that have been conducted have not used comparison groups. The few methodologically sound studies that have been conducted have found generally positive results in terms of the current sibling relationship and the psychological well-being of the siblings.

Psychological Well-Being. Few studies have addressed the psychological well-being of adults having siblings with intellectual disabilities. As a result, little is known about the functioning of the adult siblings of persons with intellectual disabilities. Burton and Parks (1994) examined the self-esteem, locus of control, and career aspirations of college-age adults of siblings with disabilities. Their major finding was that siblings with disabled brothers and sisters reported higher levels of internal locus of control than those with nondisabled siblings. The self-esteem of these two groups did not differ. The two groups also did not differ as to their career aspirations, although participants of male siblings with disabilities more often went into the helping professions than did participants of females siblings with disabilities.

Seltzer, Greenberg, Krauss, Gordon, and Judge (1997) compared the psychological well-being of siblings of adults with intellectual disabilities versus siblings of adults with mental illness. Psychological well-being was measured using six dimensions: environmental mastery, self-acceptance, purpose in life, autonomy, positive relations with others, and personal growth. Predictors of psychological well-being for the siblings of individuals with intellectual disabilities included income, marital status, and the closeness of the sibling relationship. The greater the non-disabled sibling's income, the more positive the well-being. Married siblings exhibited better psychological well-being; the closer the sibling relationship, the better psychological well-being of the sibling. The psychological well-being of participants who perceived that their siblings had a great effect on their lives depended on whether the siblings perceived the effect as negative or positive. Those who perceived it as positive had better psychological well-being than those who perceived it as negative. The number of behavioral problems



exhibited by the sibling with intellectual disabilities was not predictive of the other sibling's psychological well-being.

Quality of the Sibling Relationship. In a retrospective study, Wilson, McGillivray, and Zetlin (1992) assessed the quality of the childhood relationships of thirty siblings of adults with intellectual disabilities. Siblings completed Schaefer's Sibling Behavior Inventory for which participants rated their perceptions of how the disabled sibling behaved towards them as children. Participants were also interviewed in a structured fashion that tapped different facets of the current sibling relationship. Higher functioning siblings tended to interact in a more reciprocal manner and were more involved in those relationships in which mutual activities were rated as important. Those participants with less functioning siblings tended to be more uncomfortable with their peers in the presence of their siblings. This discomfort was greatest during the teenage years and decreased as the siblings became adults. Level of functioning of the sibling with intellectual disabilities, however, was unrelated to warmth, frequency of contact or degree of involvement between the siblings.

Seltzer et al., (1997) compared the closeness of the adult sibling relationship when one of the siblings had intellectual disabilities with closeness when one of the siblings had a mental illness. Results revealed that sibling relationships were closer when one of the siblings had intellectual disabilities. Siblings of individuals with intellectual disabilities rated their feelings toward their brother or sister as characterized by understanding, trust, fairness, respect and affection. Siblings of individuals with intellectual disabilities also felt that their sibling reciprocated those feelings.

Seltzer, Begun, Seltzer, and Krauss (1991) studied 462 families of individuals with intellectual disabilities in terms of two types of sibling involvement: instrumental and affective support. Instrumental support consisted of helping tasks such as running errands and doing home repairs for their siblings. Emotional involvement was defined as affective support. Approximately one-fifth of the adults with intellectual disabilities received some sort of instrumental support from their siblings. In contrast, four-fifths of the adults with disabilities received affective support from at least one of their siblings. The 'most involved' sibling was more likely to be female than male and the same sex as the sibling with intellectual disabilities. These sex differences are consistent with findings of sibling relationships when neither has intellectual disabilities (Goetting, 1986).

Summary. The dearth of research on adult siblings of individuals with intellectual disabilities is striking. Initially, researchers in this area focused on children. This focus may reflect the assumption that early intervention strategies could be implemented if difficulties or problems were identified. As research in this area progresses, the focus is shifting to conducting research with adults. Given the paucity of research, it is difficult to comment on either the psychological functioning of these adults or their sibling relationships. The research that has been conducted provides some positive preliminary results, but more research is needed before any definitive conclusions can be reached.

### Meta-Analyses

Given the conflicting findings of the studies in this area in general, Summers, White, and Summers (1994) conducted a meta-analysis in an effort to determine the reasons for these discrepancies. Thirteen empirical articles of childhood studies were reviewed. Their major findings were methodological. The higher the quality of the study,

the less likelihood of finding significant differences between individuals with and without siblings with intellectual disabilities. Child surveys were also less likely to yield negative results than observational research or parental surveys. This may indicate parents and researchers view the situation less positively than children themselves. Their meta-analysis revealed greater prosocial behavior in children of siblings with intellectual disabilities. Prosocial behavior was measured using both parent and direct observation. There were some limitations, however, to the Summers et al., meta analysis: the majority of studies in the meta-analysis were dated, the authors were only able to collect 13 studies that had an appropriate comparison group for meta-analysis, and only ten of these studies investigated siblings of children with intellectual disabilities. In addition, there have been significant advances in meta-analysis since the Summers et al., study was published.

More recently, Rossiter and Sharpe (1998) extended and refined the Summers et al. (1994) meta-analysis by including twenty-five studies representing over one-thousand siblings of persons with mental disabilities. Studies were selected from literature searches, qualitative reviews of the literature, and from the previous meta-analysis. Case studies, non-empirical papers, and studies without an appropriate comparison group were excluded. Rossiter and Sharpe (1998) found a statistically significant but modest negative effect for having a sibling with mental disabilities. This finding is consistent with the Summers et al. (1994) meta-analysis. Parent and child surveys produced effect sizes of approximately the same magnitude. Direct observation of the siblings of the persons with intellectual disabilities produced much larger negative effect sizes. Although there were only three effect sizes coded for direct observation, this may imply both the siblings of

individuals with intellectual disabilities and their parents are viewing the sibling more positively than is the case.

Rossiter and Sharpe (1998) also found that psychological functioning was significantly more negative for the siblings of persons with intellectual disabilities compared to control participants. When psychological functioning was divided into discrete categories, depression appeared to be a greater problem than externalizing and internalizing behaviors, difficulties in socialization, and anxiety. This outcome suggests further research into depression specifically, and psychological functioning more generally, should be conducted.

### Family Systems Theory

It is impossible to ascertain the effects of having a child with intellectual disabilities on the siblings of the child without examining the familial pattern of interactions. Family dynamics are an intriguing and often complex set of relationships, even more so when a child with intellectual disabilities is born into a family. Family Systems Theory, developed by Bowen (1978), proposes that the interactive nature of family processes is more important to investigate than to examine the individual member of the family in isolation (Moore, 1990). People are believed to be a part of a social context, and to understand the individual, one must understand the family. The theory was originally developed in an effort to understand the impact of an illness of a family member (e.g., alcoholism) on the family as a whole. It was an effort to understand illness from a broader context, integrating parental, child, sibling, and marital relationships. The theory postulates that there are three subsystems in a family: the spousal, the parent-child and the sibling. This theory suggests that what happens within any subsystem ultimately

affects and is affected by events and circumstances within the other subsystems (Cicirelli, 1991). The sibling subsystem or sibling relationship evolves over time as members of the family are born or die and as individual roles change (Cicirelli, 1991).

Given the unique nature of the family system when one of the offspring has intellectual disabilities, the combination of family systems and developmental perspectives is beneficial in explaining the dynamics of the family (Morgan, 1988). Several principles from the family systems theory are applicable to the family situation when one of the children has a developmental disorder: the child with disabilities is thought to be a part of a complex interrelated familial pattern that interacts in direct and indirect ways; behavior occurs in relationships that are reciprocal and bi-directional; and the family is a system that functions as an interdependent but organized whole.

#### Current Study

The purpose of the current study was twofold: first, to investigate the personal and psychological well-being of adult siblings of individuals with intellectual disabilities, and second, to examine past and current sibling relationships when one of the siblings has intellectual disabilities. The available childhood literature is mixed in its prognosis of the functioning of siblings of individuals with intellectual disabilities. Some studies have shown that siblings of individuals with intellectual disabilities are vulnerable to psychological problems while other studies have failed to find such results. Although the magnitude of the negative effects were minimal, Rossiter and Sharpe (1998), on the basis of their meta-analysis, concluded that siblings of children with intellectual disabilities were at risk for various psychological problems, most notably depression. Little is known about the psychological well-being of siblings of individuals with intellectual disabilities

as adults. This study investigated the psychological functioning of adult siblings of individuals with intellectual disabilities. It is important to ascertain if these individuals are at an increased risk for psychological problems so that some preventative measures can be established.

The second purpose of this study was to explore the adult relationship between siblings when one of the siblings has intellectual disabilities. Little is known about the relationship these individuals share. Sibling relationships are an integral part of our lives. This is even more important when one of the siblings has intellectual disabilities. For example, when parents are no longer able to provide guardianship for individuals with intellectual disabilities, siblings often assume this responsibility. Given the significant role siblings play in the lives of individuals with intellectual disabilities, it is important to explore the relationship they share. There has been an assumption in the literature that these relationships are similar to that of sibling relations when neither has intellectual disabilities. This study will provide some initial insight into this issue. Retrospective accounts of perceived levels of caregiving in childhood sibling relationships was also investigated. Siblings with intellectual disabilities were administered a standardized relationship questionnaire and then asked open-ended questions to further investigate their adult sibling relationships. The predictors of the quality of a sibling relationship when one sibling has intellectual disabilities were also explored: age spacing, sex, severity of the disability, and familial environment.

### Hypotheses

The first four hypotheses are predictions concerning group differences between siblings of individuals with intellectual disabilities and siblings of individuals without

intellectual disabilities. The fifth hypothesis pertains specifically to sibling relationships when one the siblings has intellectual disabilities, and the final four hypotheses are predictions regarding sibling relationships in general.

1. Assuming individuals who have siblings with intellectual disabilities have decreased opportunities for friendship and shared experiences, it was expected they would have qualitatively different childhood and adult sibling relationships than participants who have siblings without intellectual disabilities.

2. It was expected that retrospective accounts of childhood caregiving would be greater (Bagenholm & Gillberg, 1991; McHale & Gamble, 1989; Stoneman et al., 1987) when participants had siblings with intellectual disabilities versus participants who had siblings without disabilities.

3. Given the previous negative findings with children (Rossiter & Sharpe, 1998), it was expected that participants who have siblings with intellectual disabilities would have elevated scores on the psychological functioning measures.

4. Consistent with the tenets of Family System Theory, participants who have siblings with intellectual disabilities were expected to have qualitatively different family environments than participants who had siblings without disabilities.

5. Assuming that the severity of the intellectual disability is associated with decreased opportunities for friendship and shared experience in sibling relationships, it was expected that the more severe the intellectual disability, the less positive the adult sibling relationship (Wilson et al., 1992).

6. It was anticipated that the quality of the childhood sibling relationship would be predictive of the quality of the current sibling relationship, i.e., siblings who had a

negative or conflictual childhood sibling relationship would have similar difficulties as adults.

7. Consistent with previous research, it was predicted that the closer the adult sibling relationship, the better the psychological well-being of the adult participant (Seltzer et al., 1997)

8. Siblings with a positive family environment were expected to have a more positive sibling relationship (Ross & Milgram, 1982).

9. Consistent with previous findings, females and participants closer in age with their siblings were expected to have more positive sibling relationships (Bank & Kahn, 1982; Pulakos, 1990).



## Method

### Participants

Forty-four participants were recruited for this study: twenty-two participants who had siblings with intellectual disabilities and twenty-two participants who had siblings without an intellectual disability. The latter participants served as the comparison group. For the purposes of this study, participants who had siblings with intellectual disabilities will be referred to as the 'clinical group'. The use of the term 'clinical' does not imply that participants who have siblings with intellectual disabilities have clinical problems; the term is used for brevity purposes only to differentiate participants who have siblings with intellectual disabilities and participants who have siblings without disabilities. All participants were 18 years or older. In both groups, there were 18 female and 4 male participants, and 10 female siblings and 12 male siblings. The comparison and clinical groups were matched post-hoc on age and sex of participant. The average age of the participants in the comparison group was 26.7 years and the average of the clinical group was 32.3 years. The average age of the siblings of the comparison group was 27.1 years and the clinical group was 30.3 years. Of the 44 participants, 30 came from a university population and 14 were from the community. Of the 22 participants that made up the clinical sample, eight were from a university. The remaining 14 were recruited from the community. Of the 14 from the community, two were also students at a university in Canada.

Two of the families recruited from the community had more than one sibling who completed the questionnaire. Only one of the questionnaires returned from a family was randomly selected. One of the participants from the community could not be age-matched

with a participant from the comparison group and this participant's questionnaire was not used in the study. Overall, there were 20 questionnaires returned from the community: fourteen questionnaires were used for the study, five were discarded because they were siblings of other participants, i.e., their siblings had responded to the questionnaire, and one questionnaire was not used because there was no age match in the comparison group. Overall, 26 questionnaires were mailed to individuals in the community and 20 were returned, a response rate of 77%.

Fifty-three questionnaires were given to students at Memorial University of Newfoundland and 32 were returned. This is a response rate of 60%. All questionnaires administered through the psychology department at University of Regina were completed. Only 22 of the questionnaires returned from both university settings were used in this study. Those 22 questionnaires were utilized because of their match with the clinical sample.

### Materials

To examine participants' adult sibling relationship, the Adult Sibling Relationship Questionnaire (ASRQ), developed by Lanthier and Stocker (1985) was utilized (see Appendix A). The ASRQ is an 81-item scale that assesses qualitative features of sibling relationships in young adulthood. The ASRQ was developed as an extension of the Sibling Relationship Questionnaire (Furman & Buhrmester, 1985), the latter scale used to assess the quality of childhood sibling relationships. The ASRQ utilizes a Likert scale ranging from 'hardly at all' (1) to extremely much (5). The scale incorporates fourteen primary subscales that combine to form three higher-order factors: Warmth (Similarity, Instrumental Support, Emotional Support, Affection, Intimacy, Admiration, Knowledge

of Other, Acceptance), Conflict (Antagonism, Dominance, Competition, Quarreling), and Rivalry (Perceived Maternal Partiality and Paternal Partiality). Stocker, Lanthier, and Furman (1997) report that factor and scale scores have shown high levels of internal consistency (.74 to .92) and respectable test-retest reliability (ranging from .75 to .93).

To assess the participants' childhood sibling relationships, the Sibling Type Questionnaire (STQ) was employed (Stewart, et al., 1998b; see Appendix A). This questionnaire categorizes siblings into typologies, i.e., styles or patterns of interactions. There are two versions of the questionnaire that assess the sibling relationship at two time periods: the 'Then' version assesses the sibling relationship in childhood and the 'Now' version assesses the adult sibling relationship. The 'Then' questionnaire is a 50-item scale with five subscales: Mutuality, Criticism, Support, Parenting, and Imitation. The respective Cronbach alphas reported for these subscales are .94, .93, .92, .88, and .85. The 'Now' version also has five subscales: Mutuality, Criticism, Apathy, Competition, and Longing. Cronbach alphas reported for these subscales are .97, .93, .90, .90, and .89, respectively. Although this questionnaire is in the initial stage of development, there have been two studies that have validated the use of the factors inherent in each of the subscales with three different samples (Stewart, et al, 1998a; Stewart, et al., 1998b).

The College Adjustment Scale (CAS; Anton & Reed, 1991) was used to assess the current psychological functioning of the adult participants. This 108-item questionnaire provides comprehensive coverage of psychological functioning: anxiety, depression, suicide ideation, substance abuse, self-esteem problems, interpersonal problems, family problems, academic problems, and career problems. For ethical reasons, the suicide ideation subscale was not administered. The Academic Problems and Career

Problems subscales were administered only to the university sample. Psychometric information on the CAS is provided by Anton and Reed (1991). Internal consistency reliabilities range from .80 to .92 with an average of .86. Initial evidence for the validity of this questionnaire came from the CAS being able to distinguish those currently receiving counseling services from those who were not. Convergent and discriminant validity were reported in four studies that included samples from 33 counseling centers throughout the United States. In those four studies, it was found that CAS scores correlated highly with measures of similar constructs and did not correlate with scales measuring unrelated constructs. Correlations between the CAS and the NEO Personality Inventory (NEO-PI) were replicated across three independent samples (e.g., the Depression subscale of the CAS was correlated with the Depression subscale of the NEO-PI over the three samples at .64, .69, and .74).

The Family Environment Scale (FES; Moos & Moos, 1994) was utilized to assess participants' perceptions of their families' functioning. This scale is widely cited in the literature as a comprehensive measure of family functioning. This true/false, 90-item scale is composed of 10 subscales divided into three areas: Relationship Dimension (Cohesion, Expressiveness, and Conflict subscales); Personal Growth Dimension (Independence, Achievement Orientation, Intellectual-Cultural Orientation, Activity-Recreation Orientation, and Moral-Religious Emphasis subscales); and System Maintenance Dimensions (Organization and Control subscales). Moos and Moos (1994) report the Cronbach's alphas for all 10 subscales are acceptable (.61 to .78). Two-month test-retest reliabilities range from .73 to .86. Discriminant validity has been established by the scales failure to correlate to measures of different constructs (e.g., support in the work

environment). Attesting to the construct validity of the FES, Moos and Moos found that families who are ritualistic and have stable routines score higher on Organization, Control, and Cohesive subscales, and lower on Family Conflict. The authors also reported the relationships between the FES and various other measures of similar constructs. For example, the Cohesion subscale is highly correlated with cohesion as measured by the Family Assessment Device and the Family Adaptability and Cohesion Evaluation Scales.

The Interpersonal Reactivity Index (Davis, 1980) was used to assess level of empathy (see Appendix A). This questionnaire is a 28-item likert-type scale consisting of four subscales that measure different facets of empathy: Empathic Concern, Personal Distress, Perspective-Taking, and Fantasy. The Empathic Concern subscale measures the tendency to experience the affective reaction of sympathy and compassion for others. The Personal Distress subscale measures emotional response, or the tendency to experience personal feeling of distress and uneasiness in reaction to others' distress. The Perspective-Taking measures the cognitive tendency to see things from the point of view of others, without necessarily experiencing any affective response. The Fantasy subscale measures the tendency to imaginatively experience the feelings of fictitious characters in movies, books, and plays (Davis & Franzoi, 1991). Responses range from 0 ("does not describe me well") to 4 ("describes me very well"). Cronbach's alphas for the subscales range from .73 to .75 (Henry, Sager, & Plunkett, 1996) and test-retest stability range from .62-.80 over a 8-10 week period (Davis & Franzoi, 1991).

Separate questions were added to the questionnaire package addressing demographic and other variables (see Appendix A). These questions tapped age-spacing, severity of disability, number of siblings in the family and background information such

as sex, age, and socio-economic status. Participants stated the age-spacing between their sibling with disabilities and themselves, and whether they are older or younger than their sibling with disabilities. Participants were also asked to report the severity of the disability. Participants were given four descriptors to choose from: mild mental deficiency, moderate mental deficiency, severe mental deficiency, and profound mental deficiency (American Psychiatric Association, 1994; Sattler, 1992; see Appendix A). Intellectual Disabilities were defined according to the characteristics describing Mental Retardation in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994). Space was also provided for the participant to report an official diagnosis for themselves, if any, and for their siblings, if known.

A series of open-ended questions assessed the participants views of other relevant issues (see Appendix A). Participants were asked to address the following questions: How applicable was this questionnaire in relation to the relationship you have with your sibling? Were there any items or content areas that were not applicable? If so, which ones? Were there any aspects of your relationship with your sibling that were not covered in this questionnaire? If so, please specify. Do you perceive your relationship with your sibling as a friendship? Why or why not? Throughout your childhood and adolescence, do you think your sibling had similar experiences as you in terms of socialization, friendships, and opportunities? Why or why not?

### Procedure

Participants were recruited from both university and community populations. Originally, it was anticipated that both the clinical and comparison groups could be recruited from a university population. Because it has been found that a large percentage

of individuals who have siblings with special needs choose a profession in the social sciences (Powell & Gallagher, 1993), it was anticipated that the probability of obtaining participants who have siblings with intellectual disabilities would be greater in the psychology, social work and education departments. However, only eight individuals who had siblings with intellectual disabilities could be recruited through a university population. Due to the inability to recruit enough participants from a university population, participants for the clinical group were also recruited from a community sample. Participants from the community completed all questionnaires except for two subscales of the CAS that pertain to academic and career problems.

All of the participants from the comparison group and eight of the 22 participants who comprised the clinical group were recruited from two universities in Canada: the University of Regina in Saskatchewan and Memorial University of Newfoundland. Participants were recruited from the introductory psychology subject pool, the Faculty of Social Work, and the Faculty of Education at the University of Regina and from the Psychology Department at Memorial University of Newfoundland. The remaining 14 participants from the clinical group were recruited from the following community organizations: residential facilities for individuals with intellectual disabilities in Regina, SK., the Saskatchewan Association of Community Living, and the Canadian Down Syndrome Society.

Following ethical approval from the Faculty of Graduate Studies and Research, participants from introductory psychology classes at University of Regina were asked to volunteer their time for course credit (see Appendix B). A notice was posted on the sign-up board outside the psychology department and recruitment notices were sent to

individual professors to read in their classes. The notice stated that two groups of students were needed to participate in a study concerning sibling relationships: students who had siblings with mental disabilities, i.e., mental retardation, and students who had siblings without disabilities. Interested students signed their name and phone number to sign-up sheets outside the psychology main office. All students from the psychology department completed questionnaires in the researcher's lab.

Memos were posted on bulletin boards in both the Social Work and Education faculties at University of Regina (see Appendix C). The notices were similar to those used in the recruitment of students from the psychology department, University of Regina. All interested individuals were asked to volunteer to participate by calling a phone number. The researcher also recruited participants from these faculties by approaching faculty members and reading recruitment notices in a number of classes. Participants from the Education and Social Work faculties were given a package to complete at their leisure and returned these packages to the researcher upon completion. For all recruitment of participants, it was explicitly stated that the siblings with special needs must have a mental disability, i.e., mental retardation (see Appendix C).

Ethical clearance was obtained for this project from the psychology department at Memorial University of Newfoundland. The researcher then circulated a sign-up sheet in first- and second-year psychology classes on which students could indicate their interest in participating in the study (see Appendix D). Participants were given a package to complete at their convenience.

Community organizations and residential facilities were approached by phone concerning the possibility of recruiting participants through their organizations. General



descriptions of the study were conveyed similar to the recruitment notices for the university setting. Copies of the research proposal were provided to organizations who wanted detailed information on the study. Residential facilities distributed a notice similar to the recruitment notice used in the university setting to all family members of the individuals in their residences who had intellectual disabilities. The Canadian Down Syndrome Association distributed a description of the study to their members via an attachment to their regular mailing. This description was similar to the recruitment notice posted at the university. The Saskatchewan Association for Community Living posted a similar notice in their newsletter. Potential participants from the community were given a phone number and asked to call the researcher directly. The only exception was the Canadian Down Syndrome Association. This association opted to have the siblings contact them directly. The director of the association forwarded the names of interested individuals to the researcher. All questionnaires were then forwarded to participants through the mail.

Informed consent was obtained before the participants began the study (see Appendix E). All participants were told that the purpose of the study was to learn more about the quality of sibling relationships. Participants were also told that the researchers were interested in determining the impact, predictors, and possible outcomes of this relationship.

Participants were administered a questionnaire package containing the measures described above. The time taken to complete these measures was approximately one hour. For each of the relationship questionnaires, participants in the clinical group were asked to report on their sibling with an intellectual disability. Participants in the comparison

group were asked to report on their closest-in-age sibling. Stewart et al., (1998) report that if participants are permitted to select a sibling, the majority chose a sibling with whom they have a more positive relationship, while others use the opportunity as a chance to vent their frustrations with a sibling for which they have a negative relationship. Although the authors acknowledge that utilizing the 'closest in age' sibling methodology introduces a systematic bias, they explain that it is more beneficial to use this approach over biasing the data in terms of either positive affect relationships or exceedingly negative ones.

## Results

### Preliminary Analyses

The first task was to assess the adequacy of the match between the clinical and comparison groups. There were 22 participants in each group matched for sex and for age of participant and sibling. In both groups, there were 18 female and 4 male participants, and 10 female and 12 male siblings. In spite of efforts to match the two groups on age, the difference between the ages of comparison ( $M = 26.73$ ) and clinical group participants was significant ( $M = 32.32$ ),  $t(42) = 2.08$ ,  $p < .05$ . There was no significant difference between the ages of the siblings for the comparison ( $M = 27.14$ ) and clinical groups ( $M = 30.32$ ). There was also no significant difference between the birth-order of participants in the clinical and control group. There was, however, a difference in the birth order of siblings across the comparison and clinical groups,  $\chi^2(4, N = 44) = 10.24$ ,  $p < .04$ . There were more second-borns in the comparison group and more first-borns in the clinical group. Twelve of the participants in the clinical group and 13 of the participants in the comparison group were older than their siblings. Within the clinical group, when the siblings of participants were the second or later born, the participants were in all cases younger.

Ten of the participants in the clinical group had siblings with Down Syndrome. One of the participants had a sibling with brain damage due to a virus, one with Vasculitis, and one whose mother contracted German Measles during pregnancy. The remaining 9 participants did not have a specific diagnosis. Of the 22 participants, one had a diagnosis of Depression, one of Multiple Sclerosis, and two had Asthma. The remaining 18 did not have any medical or psychological problems.

Because the mean ages of the clinical and the comparison groups were significantly different, correlations were conducted to determine if age was related to any of the dependent variables. Significant relationships were found between age and the Conflict subscale of the Adult Sibling Relationship Questionnaire,  $r(40) = -.42, p < .01$ , the Criticism subscale of the Sibling Type-Now Questionnaire,  $r(37) = -.44, p < .01$ , the Interpersonal Problems subscale of the CAS,  $r(42) = -.29, p < .05$ , the Substance Abuse subscale of the CAS,  $r(42) = -.30, p < .05$ , and the Fantasy subscale of the Interpersonal Reactivity Index,  $r(41) = -.35, p < .02$ . Younger participants have more conflict in their sibling relationships, more interpersonal problems, more substance abuse problems, and more ability to transpose imaginatively into fictional situations.

Differences between groups were also examined for the following variables: distance between the residences of siblings, how often the siblings saw each other, how the siblings were related (biological, step-sibling, etc.), how often the siblings spoke on the phone to each other, and socioeconomic status. There were no significant differences between the two groups on any of these variables.

Because the CAS has been normed on a college population but was employed in this study with university and non-university participants, a comparison was made between students and non-students on CAS scores. There were significant differences between the student and non-student samples on anxiety,  $t(42) = 2.32, p < .03$ , substance abuse,  $t(42) = 2.06, p < .05$ , and self-esteem,  $t(42) = 2.11, p < .05$ . The student sample was more anxious ( $M = 22.53$  vs.  $M = 17.43$ ), had higher levels of substance abuse ( $M = 15.47$  vs.  $M = 12.86$ ), and lower self-esteem ( $M = 23.73$  vs.  $M = 19.93$ ). Scores at the 50<sup>th</sup> percentile for the normative population are 20 for the anxiety subscale, between 14

and 15 for the substance abuse subscale, and 21 for the self-esteem subscale of the CAS. Thus we found the non-student sample fell somewhat below the student population norms and significantly below the student sample for these three of the eight subscales of the CAS.

Given that only 10 of the 22 participants in the clinical group were students compared to all 22 participants in the comparison group, it was possible that differences on the CAS were not the result of the clinical sample having a sibling with intellectual disabilities but rather student versus non-student status. To test this possibility, *t*-tests were conducted for scores on the CAS between the students and non-students of the clinical group. No significant differences were found. Although the CAS was normed on a student population, some of the subscales of the CAS are correlated highly with instruments normed on non-student populations such as the Beck Depression Inventory ( $r = .84$  with the Depression subscale of the CAS), the State-Trait Anxiety Scale ( $r = .77$  between the Trait Anxiety and the Anxiety subscale of the CAS and  $r = .71$  with the State Anxiety Subscales and the Anxiety subscale of the CAS), the Michigan Alcoholism Screening Test ( $r = .71$  with the Substance Abuse subscale of the CAS), the Multidimensional Self-esteem Inventory-Global Self-esteem measure ( $r = -.92$  with the Self-esteem measure on the CAS; Anton & Reed, 1991).

Ten of the participants from the university sample were from Memorial University of Newfoundland. Twelve of the participants from the university sample were from the University of Regina. There were no differences between these two samples on demographic variables and all dependent measures.

Reliability Coefficients. Means, standard deviations, and Cronbach's alpha reliability coefficients for all measures are presented in Tables 1 through 3. Reliabilities were adequate with the exception of the Longing subscale of the Sibling Type-Now Questionnaire and the Achievement Orientation subscale of the FES. Further analyses indicated that these two subscales were not unidimensional but rather had two and four dimensions, respectively. Reverse scoring on two items of the Interpersonal Reactivity Scale as presented by the authors of the scale were incorrect. This error was corrected. The distribution of responses on each of the measures for the clinical and comparison groups were examined through Kolmogorov-Smirnov tests for normality and found to approximate the normal distribution in virtually all cases. Levene's test was also conducted to assess differences between the clinical and comparison groups for equality of variance. Few significant differences were found. Those significant cases were examined to see if the ratio of differences in the variances were substantial (i.e., greater than 9:1) given the *N*s were equal and relatively large (Keppel, 1991). In those few cases, the Mann-Whitney test was conducted to determine if results from a nonparametric test differed from a parametric test. No differences were found.

#### Clinical and Comparison Group Differences

Child and Adult Sibling Relationships. The first hypothesis predicted that participants in the clinical group would be differentiated from the comparison group by their childhood and adult sibling relationships. For the following *t*-tests, the Type I error rate was set at a conservative  $\alpha = .01$  although differences significant at  $\alpha = .05$

were also reported. The adult sibling relationship was assessed by two measures: the Adult Sibling Relationship Questionnaire and the Sibling Type-Now Questionnaire. Means and standard deviations for the clinical and comparison groups on these two measures are reported in Table 1. There was a significant difference between the two groups on the Competition Now subscale of the Sibling Type-Now Questionnaire,  $t(42) = -3.41, p < .001$ . There was also a significant difference between the two groups on the Conflict subscale of the ASRQ,  $t(40) = -2.69, p < .01$ . Participants in the comparison group reported more conflict and more competition with their sibling than those in the clinical group. Because there was a significant correlation between age and the Conflict subscale of the ASRQ, this analysis was repeated using age as a covariate. The difference between the clinical and comparison groups for the Conflict subscale just failed to reach significance when age was used as a covariate,  $F(1, 39) = 3.70, p < .06$ . Keppel (1991) emphasizes that even though the effect just failed to reach statistical significance, the magnitude of the effect was not zero but 'small'.

The childhood sibling relationship was assessed using the Sibling Type-Then Questionnaire. Means and standard deviations for the clinical and comparison groups on this measure are reported in Table 1. There was a significant difference between the clinical and comparison group on the Criticism subscale,  $t(41) = -6.12, p < .001$ . Participants in the comparison group reported higher levels of criticism in their childhood relationship with their siblings.

Caretaking Responsibilities. The second hypothesis predicted that participants in the clinical group would report more caretaking responsibilities than participants in the comparison group. Caretaking was measured by the Parenting subscale of the Sibling

Table 1

Means, Standard Deviations, and Cronbach's Alpha Coefficients for Sibling RelationshipMeasures

Measure	Clinical Group		Comparison Group		Alpha
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Adult Sibling Relationship Questionnaire					.95
Warmth	2.84	.72	3.11	.77	.97
Conflict	1.62*	.54	2.19*	.80	.95
Rivalry	.59	.56	.68	.59	.91
Sibling Type-Now					.78
Mutuality	38.52	13.78	38.95	12.83	.96
Criticism	20.21	4.72	24.55	9.70	.89
Apathy	21.23	9.77	24.73	9.31	.89
Competition	8.50*	1.99	12.68*	5.39	.79
Longing	17.81	4.10	17.27	4.21	.32
Sibling Type-Then					.93
Mutuality	44.81	7.99	41.67	9.60	.89
Criticism	13.91*	1.74	24.29*	7.73	.89
Support	23.85	7.43	24.05	7.73	.88
Parenting	39.77	10.09	31.62	9.12	.93
Imitation	19.09	4.81	20.60	4.71	.79

Note. N = approximately 44, \* p < .01



Type-Then Questionnaire. Questions on the caregiving scale were worded such that the older sibling was perceived as the caregiver. In response to the open-ended questions, it was evident that some of the participants found the wording of questions on the caregiving scale inapplicable when their sibling has an intellectual disability. Some of the participants in the clinical group stated that age is irrelevant when one has a sibling with a disability; even if the sibling with a disability is older, the non-disabled sibling still engages in caregiving practices. As a result, the data from nine participants whose sibling with intellectual disabilities was older were excluded. Participants from the clinical group scored higher on the Parent subscale of the Sibling Type-Then questionnaire,  $t(32) = 2.43, p < .03$ .

Psychological Well-Being. The third hypothesis anticipated less positive psychological functioning for participants in the clinical group as assessed by the College Adjustment Scale. There were significant differences between the comparison and clinical groups on Anxiety,  $t(42) = -2.56, p < .015$ , Substance Abuse,  $t(42) = -2.43, p < .02$ , and Self-esteem,  $t(42) = -2.51, p < .02$ . Unexpectedly, participants in the clinical group reported lower levels of anxiety and substance abuse, and higher self-esteem than participants in the comparison group (see Table 2). Because age was negatively correlated with Substance Abuse, this analysis was rerun using age as a covariate. The difference between the clinical and the comparison group marginally failed to reach statistical significance at  $\alpha = .05$  when age was used as a covariate,  $F(1,41) = 3.61, p < .07$ . According to Keppel (1991), the effect size associated with this outcome is 'small'.

Family Environment. The fourth hypothesis predicted that participants from the clinical group would have a less positive family environment than participants from the

Table 2

Means, Standard Deviations, and Cronbach's Alpha Coefficients for College Adjustment Scale

Measure	Clinical Group		Comparison Group		Alpha
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
College Adjustment Scale					
Anxiety	18.32*	5.31	23.50*	7.88	.90
Academic Problems	20.50	6.70	22.50	6.94	.90
Career Problems	15.25	5.47	18.00	7.83	.94
Depression	17.77	5.50	20.05	6.18	.86
Self-esteem Problems	20.45*	4.76	24.59*	6.08	.86
Family Problems	17.86	6.83	18.27	5.40	.87
Substance Abuse	13.23*	2.20	16.05*	4.97	.84
Interpersonal Problems	17.77	5.25	18.68	5.69	.84

Note. N = approximately 44 except for the Academic Problems and Career Problems

subscales where N = approximately 30, \*  $p < .02$

comparison group. The Family Environment Scale was utilized to assess this hypothesis. Means and standard deviations for this measure are presented in Table 3. Participants from the clinical group scored somewhat higher on the Organization subscale of the FES,  $t(39) = 2.04, p < .05$ . Scores on the Moral-Religious Emphasis subscale marginally failed to attain significance,  $t(40) = 1.96, p < .06$ , with participants in the clinical group reporting slightly higher levels of moral-religious emphasis. According to Keppel (1991), the effect size associated with this outcome was 'small'.

### Correlates of the Sibling Relationship

Correlates of the Child Sibling Relationship. The quality of the childhood sibling relationship was thought to be predicted by family environment (hypothesis 8), sex of participants (hypothesis 9), age-spacing (hypothesis 9), and the presence of a sibling with an intellectual disability (hypothesis 1). The quality of the childhood sibling relationship was assessed by each of five subscales of the Sibling Type-Then Questionnaire. As indicated above, data from nine participants whose sibling with intellectual disabilities was older were excluded for the analysis using the Parent subscale of the Sibling Type-Then Questionnaire. For this analysis, family environment was operationalized as scores on the Family Problems Subscale of the CAS. Age-spacing was operationalized as the absolute value of the age of the participant from the age of their sibling. None of the regression models predicting Mutuality, Support, Imitation or Parenting attained statistical significance. The regression model was significant for the Criticism subscale of the Sibling Type-Then Questionnaire,  $F(4, 38) = 9.43, p < .001, R^2 = .50$ . The significant predictor of the childhood sibling relationship was the presence or absence of a sibling

Table 3

Means, Standard Deviations, and Cronbach's Alpha Coefficients for Family EnvironmentScale

Measure	Clinical Group		Comparison Group		Alpha
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Family Environment Scale					.78
Cohesion	5.43	2.78	5.72	2.32	.81
Expressiveness	4.29	2.28	4.61	1.79	.74
Conflict	2.59	2.24	3.36	2.06	.74
Independence	6.55	1.70	6.22	1.80	.54
Achievement Orientation	5.45	1.77	5.27	1.64	.33
Intellectual-Cultural Orientation	5.10	2.31	4.85	2.23	.72
Active-Recreational Orientation	5.61	2.06	5.45	1.76	.72
Moral-Religious Emphasis	5.25	2.29	4.00	1.82	.71
Organization	6.36*	2.09	5.00*	2.18	.73
Control	4.25	2.15	3.73	2.33	.70

Note. N = approximately 44, \*  $p < .05$ .

with an intellectual disability,  $\beta = -.67$ ,  $SE = 2.01$ . There was greater criticism in the childhood sibling relationship when there was no sibling with an intellectual disability in the family. Because the grouping variable was a significant predictor in the overall model, separate regressions were calculated for clinical and comparison groups. There were no significant predictors for the comparison group. The regression model for Criticism was significant for the clinical group,  $F(3, 18) = 3.71$ ,  $p < .04$ ,  $R^2 = .38$ . Family problems was a significant predictor of criticism in childhood sibling relationships for the clinical group,  $\beta = .41$ ,  $SE = .05$ .

The relationship between family environment and the childhood sibling relationship (hypothesis 8) was also examined through the Family Environment Scale. Collapsing across groups, the amount of conflict in a family was negatively correlated with mutuality in childhood sibling relationships,  $r(41) = -.41$ ,  $p < .01$ . Intellectual-Cultural orientation shared some relationship to Support,  $r(35) = .36$ ,  $p < .05$ , and Imitation,  $r(36) = .36$ ,  $p < .05$  in the childhood sibling relationship.

Correlates of the Adult Sibling Relationship. The quality of the adult sibling relationship was thought to be predicted by family environment (hypothesis 8), sex and age-spacing (hypothesis 9), and the presence or absence of a sibling with an intellectual disability (hypothesis 1). The quality of the adult sibling relationship was operationalized by the three higher-order subscales of the ASRQ: Warmth, Conflict, and Rivalry. For this analysis, family environment was operationalized as the Family Problem subscale of the CAS. All three regression models were significant: Warmth,  $F(4, 35) = 2.73$ ,  $p < .05$ ,  $R^2 = .24$ ; Conflict,  $F(4, 37) = 5.45$ ,  $p < .001$ ,  $R^2 = .37$ ; Rivalry,  $F(4, 34) = 2.87$ ,  $p < .04$ ,  $R^2 = .25$ . For all three subscales of the ASRQ, the Family Problems subscale of the CAS was

a significant predictor of the adult sibling relationship: Warmth,  $\beta = -.46$ ,  $SE = .02$ ; Conflict,  $\beta = .43$ ,  $SE = .02$ ; Rivalry,  $\beta = .50$ ,  $SE = .01$ . In addition, the absence of a sibling with an intellectual disability was predictive of Conflict in the adult sibling relationship,  $\beta = -.32$ ,  $SE = .23$ . Because age was correlated with the Conflict subscale of the ASRQ and because there was a significant difference between the comparison and control groups on their age, this analysis was rerun adding age as a predictor variable. The Conflict model remained significant, Conflict,  $F(5, 36) = 5.27$ ,  $p < .001$ ,  $R^2 = .42$ . Family problems remained a significant predictor of the adult sibling relationship,  $\beta = .41$ ,  $SE = .02$ . However, the absence of a sibling with a disability was no longer significant.

Other hypotheses were made about the adult sibling relationship. It was anticipated that the adult sibling relationship would be affected by the level of intellectual disability (hypothesis 5), adult psychological functioning (hypothesis 7), family environment (hypothesis 8), and age-spacing (hypothesis 9). The correlation matrix is presented in Table 4. The relationship between level of functioning and rivalry in adult sibling relationship was not significant. Examination of the scatterplot revealed two outliers that when deleted led to a significant correlation,  $r(18) = .55$ ,  $p < .02$ . The relationship between level of functioning and warmth in adult sibling relationship was not significant. The relationship between conflict and level of functioning marginally failed to reach significance,  $r(21) = -.42$ ,  $p < .06$ . According to Keppel (1991), even though this effect just failed to reach statistical significance, the magnitude of the effect was large.

Table 4

Relationship Between Adult Sibling Relationship and Psychological Functioning, Family Environment, and Age-Spacing

	Warmth	Conflict	Rivalry
Level of Intellectual Disability	-.25	-.42	.20
Anxiety	-.11	.63**	.39
Academic Problems	-.05	.40*	.03
Career Problems	.29	.31	-.07
Depression	-.20	.59**	.46**
Family Problems	-.42**	.47**	.50**
Interpersonal Problems	-.27	.54**	.36
Substance Abuse	-.01	.63**	.26
Self-esteem	-.23	.37	.33*
Achievement Orientation	-.01	.32*	.21
Active-Recreational Orientation	.17	.13	-.14
Cohesion	.52**	-.21	-.54**
Conflict	-.50**	.41**	.42**
Control	-.24	.19	.32
Expressiveness	.43**	-.20	-.56**
Intellectual-cultural Orientation	.41*	.12	-.18
Independence	-.01	-.30	-.26
Moral-Religious Emphasis	-.16	-.18	-.09
Organization	-.16	.04	.09
Age-spacing	-.07	-.35*	-.09

Note.  $N$  = approximately 44 except for the CAS where  $N$  = approximately 30.

\*  $p < .05$ , \*\*  $p < .01$

The amount of conflict in an adult sibling relationship was positively correlated with the amount of conflict and achievement orientation in a family, anxiety, depression, family problems, interpersonal problems, academic problems, and substance abuse and negatively correlated with age-spacing. Because age is correlated with the Conflict subscale of the ASRQ and the Interpersonal Problems and Substance Abuse subscales of the CAS, these correlations were rerun using age as a covariate. Conflict remained positively correlated with both substance abuse,  $r(39) = .57, p < .01$ , and interpersonal problems,  $r(39) = .47, p < .01$ .

The amount of warmth in a sibling relationship was positively correlated with the amount of cohesion, expressiveness, and intellectual-cultural orientation in a family and negatively correlated with the amount of conflict in a family and overall family problems. The amount of rivalry in adult sibling relationships was correlated positively with the amount of depression and the amount of family problems individuals report in adulthood. As higher scores on the self-esteem subscale of the CAS are indicative of lower self-esteem, the positive correlation between rivalry and self-esteem actually indicates a negative relationship between the variables. Rivalry in sibling relationships was negatively correlated with the amount of cohesion and expressiveness in the family environment and positively correlated with the amount of conflict in the family environment.

Child and Adult Sibling Relationships. To examine the relationship between childhood and adult sibling relationships (hypothesis 6), correlations were calculated between subscales of the Sibling Type-Then Questionnaire and Sibling Relationship Questionnaire. Correlation coefficients are presented in Table 5. The amount of



Table 5

Correlations of Child and Adult Sibling Relationships

	Warmth	Conflict	Rivalry
Mutuality	.62**	.01	-.21
Criticism	.13	.51**	.23
Support	.50**	.21	-.09
Parenting	.25	.23	-.21
Imitation	.50**	.47**	-.08

Note. Warmth, Conflict, and Rivalry are subscales of the Adult Sibling

Relationship Questionnaire. Row subscales are from the Sibling Type-Then

Questionnaire. \*\*  $p < .01$

mutuality, support, and imitation found in the childhood sibling relationship was associated with the level of warmth in the adult sibling relationship. Criticism and imitation in childhood were associated with the amount of conflict in adulthood. Because age was negatively correlated with conflict in adult relationships, this analysis was rerun using age as a covariate. Both Criticism,  $r(37) = .44$ ,  $p < .01$ , and Imitation,  $r(37) = .47$ ,  $p < .01$ , remained positively correlated with the amount of conflict in adult relationships. Rivalry in the adult sibling relationship was not associated with quality of the childhood sibling relationship. The correlations between the child and adult sibling relationship measures reported in Table 6 were examined separately for the clinical and comparison groups. No significant differences in the correlation coefficients across the two matrices were identified.

#### Family Environment and Psychological Functioning

The relationship between family environment and psychological functioning was examined through correlational analyses (see Table 6). The subscales of the FES were used to evaluate family environment and the subscales of the CAS were used to operationalize psychological functioning. The Conflict scale of the FES was correlated with the Anxiety subscale of the CAS,  $r(43) = .40$ ,  $p < .01$ , the Depression subscale of the CAS,  $r(43) = .44$ ,  $p < .01$ , and the Family Problems subscale of the CAS,  $r(43) = .43$ ,  $p < .01$ . The Achievement Orientation subscale of the FES was significantly correlated with the Interpersonal Problems subscale of the CAS. Because the Interpersonal Subscale is correlated with age, this analysis was rerun using age as a covariate. Interpersonal problems remained correlated with the Achievement Orientation subscale of the CAS,  $r(35) = .38$ ,  $p < .02$ . The Expressiveness subscale of the FES was correlated with the

Table 6

Correlations of Family Environment and Psychological Functioning

	Anxiety	AP	CP	Depression	FP	IP	SA	SE
Achievement Orientation	.26	.34	.09	.20	.26	.38	.15	.17
Active-Recreational Orientation	.11	.38	.06	-.01	.01	.06	.10	.04
Cohesion	-.20	-.20	-.05	-.33	-.37	-.31	-.17	-.34
Conflict	.40**	-.05	.11	.44**	.43**	.38	.25	.22
Control	.21	.15	.00	.23	.27	.04	.08	.02
Expressiveness	-.28	-.15	-.08	-.42**	-.57**	-.44**	-.16	-.36
Intellectual-cultural Orientation	.12	.15	.37	.26	.13	.16	.01	.08
Independence	-.14	.27	-.12	-.19	-.30	-.40	-.17	-.17
Moral-Religious Emphasis	-.01	-.14	.18	.06	-.37	-.02	-.22	-.09
Organization	-.02	-.12	-.17	.08	.15	.07	-.14	.07

Note. N = approximately 40 except for the CASFP and CASAP where N = approximately 25. \*\*  $p < .01$ ,

AP = Academic Problems, CP = Career Problems, FP = Family Problems, IP = Interpersonal Problems,

SA = Substance Abuse, SE = Self-Esteem.

following subscales of the CAS: Depression,  $r(38) = -.44, p < .01$ , Family Problems,  $r(38) = -.57, p < .01$ , and Interpersonal Problems,  $r(38) = -.43, p < .01$ . The correlation between expressiveness and interpersonal problems was rerun using age as a covariate. This correlation remained significant,  $r(35) = -.44, p < .01$ . The correlations between family environment and psychological functioning were examined separately for the clinical and comparison groups. The only significant differences between the groups was that Self-Esteem was negatively correlated with Expressiveness in the clinical group,  $r(20) = -.69, p < .01$ , but not in the comparison group.

#### Multivariate Discrimination Between Groups.

The literature has suggested that important differences exist between siblings of individuals with disabilities and siblings of individuals without disabilities. The relatively small sample sizes in the clinical and comparison groups precludes considering simultaneously the large number of predictor variables derived from the literature and measured in this thesis. A small number of promising variables thought a priori to differentiate between the clinical and comparison groups were identified and served as predictor variables in two discriminant function analyses. These analyses must be considered preliminary given the small sample size. Because Stevens (1992) suggests a ratio of 20 subjects per variable, two separate discriminant analyses were conducted; the first relating to current psychological functioning, the second relating to sibling relationships. Three predictors of group membership were entered into the first discriminant analysis: Anxiety, Depression and Family Problems subscales from the CAS. The Conflict and Rivalry higher-order subscales from the ASRQ, and the

caregiving (Parenting) subscale from the Sibling Type-Then Questionnaire were entered into the second analysis.

Psychological Functioning. The first discriminant function analysis was conducted with all 44 participants on measures from the CAS. The Box's M Test was not significant indicating that the assumption of equal population covariance matrices was met. The eigenvalue of .29 was associated with a canonical correlation of  $r = .47$ . This discriminant function was significant, Wilks' Lambda = .78,  $X^2(3) = 10.2$ ,  $p < .02$ . An examination of the pooled within-groups correlation, the correlation between the discriminant function and the predictor variables, revealed that Anxiety correlated highest with the discriminant function,  $r(42) = .74$ , followed by Depression,  $r(42) = .37$ , and to a much lesser extent Family Problems,  $r(42) = .07$ . This discriminant function was able to accurately classify 70.5% of the participants into their respective groups.

Sibling Relationship Measures. The second discriminant function analysis was conducted with 30 participants on the sibling relationship measures. Due to the wording of the Parenting subscale, the data from nine participants whose sibling with intellectual disabilities was older were excluded from the analysis. The Box's M Test was not significant indicating that the assumption of equal population covariance matrices was met. The eigenvalue of .45 was associated with a canonical correlation of  $r = .56$ . This discriminant function was significant, Wilks' Lambda = .69,  $X^2(3) = 9.88$ ,  $p < .02$ . An examination of the pooled within-groups correlation, the correlation between the discriminant function and the predictor variables, revealed that Parent and Conflict correlated the highest with the discriminant function,  $r(28) = .58$  and  $r(28) = -.54$

respectively, and to a much lesser extent Rivalry,  $r(28) = -.11$ . This discriminant function was able to accurately classify 83.3% of participants into their respective groups.

### Sex Differences on the Sibling Relationship Measures

To test the ninth hypothesis, a series of  $t$ -tests were conducted to determine whether sex differences existed on the sibling relationship measures. The only difference found was for the Longing subscale of the Sibling Type-Now Questionnaire,  $t(42) = 2.33$ ,  $p < .03$ . Females scored higher on the longing subscale indicating a greater yearning for the return of something lost or the attainment of something unfulfilled or beyond reach with respect to their sibling (Stewart et al., 1998b).

### Qualitative Information

One of the goals of this study was to determine if standardized questionnaires regarding sibling relationships are appropriate when one of the siblings has an intellectual disability. To assess this objective, participants in the clinical group were asked to answer five open-ended questions after completing the standardized questionnaires on sibling relationships (see Appendix A). The first question asked how applicable the standardized questionnaires were to the relationship participants share with their sibling. Fifty-two percent of participants stated that the questionnaires were not applicable. To determine if any differences existed between those who answered positively and those who answered negatively,  $t$ -tests were conducted. The only significant difference was that those who stated that the questionnaires were applicable scored higher on the Independence subscale of the FES,  $t(18) = -3.26$ ,  $p < .01$ . Many of the participants mentioned that as a consequence of their sibling's limited verbal abilities, numerous questions were inappropriate and difficult to answer. One participant revealed, "It is hard for my brother

and I to have a relationship described in most questions because he is mentally handicapped and does not talk.” Another stated, “My sibling doesn’t have the depth of understanding to express some of his opinions/thoughts/feelings - I had to guess based on how he behaves in our relationship.”

A second question asked if there were any items or content areas that were not applicable to the relationship participants share with their sibling. Participants mentioned a number of content areas that were not applicable: questions pertaining to the older sibling taking care of the younger sibling, competition, jealousy, how the sibling with a disability feels or perceives the sibling relationship, sharing of thoughts, feelings, and ideas, receiving emotional and financial support from the sibling, verbal interactions, phone calls from siblings, and how siblings help participants with personal problems. Many of the participants mentioned that questions pertaining to verbal interactions with and interpretation of siblings feelings and emotions were not applicable. A number of participants also mentioned that caregiving from the older sibling was irrelevant in their relationship because regardless of who was older, the sibling without a disability did the caregiving.

A third question asked if there were any content areas or aspects of their sibling relationship that were missing from the questionnaire. Participants mentioned the following content areas were missing from the questionnaire: perceptions of responsibility for their sibling, embarrassment, resentment, sibling’s treatment of parents, how much time was spent with the sibling in areas such as personal care, academic work, and behavior problems, parents perceptions of the child with a disability, activities done together in the community, involvement in the education and upbringing of the sibling,

protecting the sibling from others' stares and laughter, bribing the sibling, guilty feelings, how the relationship has changed, regret about past feelings and embarrassment, uncertainty about sibling's future, and general confusion about the sibling with intellectual disabilities. One participant responded, "I found it hard to answer confidently the questions with respect to 'closeness on a sharing level' for intellectually and emotionally we are on such a different level. There are many issues which we can't relate to each other on. But yet there is a strong degree of love, respect and admiration on both sides of the relationship."

Participants were asked to comment on whether or not they perceived their relationship with their sibling as a friendship. Fifty-five percent answered positively, 36% said no, and 14% said yes and no. Many of the participants said that the relationship they share with their sibling was a friendship but not like a typical friendship. One participant said, "Yes and no. Friendships have many faces with close friendships being mutual sharing of thoughts, feelings, etc. While (name) does not do this, we have a very positive relationship with lots of mutual love being shared." Others did not perceive their relationship as a friendship. "There does not seem to be opportunity and capacity for developing a meaningful friendship with her." Another said, "I love my brother very much. I also know he loves me. I don't view my relationship with him as a friendship though."

The last question asked if participants thought their siblings had similar experiences as themselves in terms of socialization, friendship, and opportunities. Many of the participants stated their sibling did not have similar experiences due to their limited intellectual abilities. Although many of the participants said that their siblings were



involved in various social activities and were given opportunities, they thought that these activities and opportunities were different than what they themselves had been given as children. One participant stated, “With respect to opportunities, I think that my brother was offered as many opportunities as I, but unfortunately his special needs limited his [pursuit] of certain desires like driving a car, going to university, or working certain jobs.” Another participant stated, “Overall, we both socialized however, in very different ways and with different focuses.” One of the common themes that emerged from the responses was the limited capacity siblings had for friendships. Another theme centered around the idea that decisions for social activities and friendships were not often made by the sibling with disabilities, but rather by other people such as parents and siblings.

## Discussion

The present study examined the psychological functioning and sibling relationships of adults who have siblings with intellectual disabilities. Previous research has examined the psychological functioning of children who have siblings with intellectual disabilities and has found that these children are more depressed than children who have siblings without intellectual disabilities (Rossiter & Sharpe, 1998). However, there has been a dearth of research in the areas of adult functioning and adult sibling relationships when one of the siblings has an intellectual disability.

The majority of results from this study can be categorized into findings related to sibling relationships, psychological functioning, and family environment. Results from this study contribute to the general sibling relationship literature and the literature focusing specifically on individuals who have siblings with intellectual disabilities. As the main purpose of this study was to investigate psychological functioning and sibling relationships when one of the siblings has intellectual disabilities, results will be discussed first as they relate to that population or how the clinical group differs from the comparison group, followed by any results that are pertinent to sibling relationships and psychological functioning more generally.

### Sibling Relationships: Clinical and Comparison Groups

#### Childhood Sibling Relationships

Criticism. Assuming that siblings of individuals with intellectual disabilities have decreased opportunities for friendships and shared experiences, it was predicted that individuals who have siblings with intellectual disabilities would have qualitatively different child sibling relationships than individuals who had siblings without disabilities.

This assumption was confirmed through the responses to the open-ended question that asked if clinical group participants believed their siblings had similar opportunities for friendship and shared experiences. In spite of the support for the assumption that was the basis for this prediction, the only difference that emerged between the clinical and the comparison group on the childhood sibling relationship measures was that siblings in the clinical group were less critical of each other than siblings in the comparison group. Given their sibling's disability, participants in the clinical group may not have felt it was appropriate to criticize their sibling. The open-ended questions revealed that participants tend to be very protective of their siblings with disabilities and to guard them from outside criticism. One participant noted, "We also protected him from strangers or defended him because some would stare and laugh at him." As a result, it is not surprising that less criticism was found in sibling relationships when one of the siblings has an intellectual disability.

For the clinical group, criticism in childhood relationships was related to family problems. Again, it is not surprising there is greater criticism in sibling relationships when there are problems in the family of origin. Stoneman and Brody (1993) suggest that a positive family environment and marital satisfaction may allow parents to utilize effective parenting strategies to positively influence the sibling relationship. On the other hand, if the family is experiencing some difficulties, there may be a tendency for the sibling without a disability to blame the sibling with a disability for the family discord; there may be less opportunity for the parents to ensure the siblings understand their brother's or sister's disability; and there may be less opportunities for the family to discuss issues such as guilt, blame, or embarrassment with the sibling.

Caregiving. Past research has found that siblings of individuals with intellectual disabilities adopt greater caretaking roles than those who do not have siblings with disabilities (Stoneman et al., 1988). Results from the discriminant analysis revealed that clinical and comparison groups could be accurately classified based on their scores from the caregiving subscale of the Sibling Type-Then measure. Participants who had siblings with intellectual disabilities had higher scores on the caregiving scale.

In the current study, individuals who had siblings with intellectual disabilities had greater caretaking responsibilities than those who had siblings without disabilities. In response to the open-ended questions, it was evident that some of the participants found the wording of questions on the caregiving scale inapplicable when the sibling has an intellectual disability. Questions on the caregiving scale were worded such that the older sibling was perceived as the caregiver. Some of the participants in the clinical group stated that age is irrelevant when one has a sibling with a disability; even if the sibling with a disability is older, the non-disabled sibling still engages in caregiving practices. As a result, when this subscale was used in any of the analyses, participants who were younger than their sibling with intellectual disabilities were excluded from the analyses. Consequently, data from individuals who had siblings with intellectual disabilities who were older than themselves could not be analyzed.

Although the findings are not uniform across studies, increased caregiving in childhood has been found to be associated with negative outcomes (Stoneman & Brody, 1993). In the childhood literature, increased caregiving has been associated with compromised sibling relationships, decreased opportunities for non-familial activities, increased stress, and resentment in the nondisabled child (Stoneman & Brody, 1993;

Stoneman et al., 1987). This study investigated caregiving in childhood from a retrospective adult perspective and examined the effects of caregiving on adult sibling relationships and psychological functioning. Results reveal that although reported caregiving is higher in the clinical group, this caregiving is not associated with any negative psychological consequences or problems with the sibling relationship. It may be that individuals recall increased caregiving in childhood as having a positive influence on their lives.

### Adult Sibling Relationship

Competition and Conflict. Assuming that siblings of individuals with intellectual disabilities have decreased opportunities for friendship and shared experiences in childhood, it was predicted that individuals who have siblings with intellectual disabilities would have qualitatively different adult sibling relationships than individuals who had siblings without disabilities. It was found that individuals who had siblings with intellectual disabilities were less competitive in their adult sibling relationships when compared to individuals in the comparison group. There was also less conflict in adult sibling relationships when one of the siblings had an intellectual disability. The responses to the open-ended questions revealed that many participants found questions regarding competition in sibling relationships inapplicable when one has a sibling with intellectual disabilities. Because individuals with intellectual disabilities have fewer opportunities to excel in areas such as education and career, there may be little justification for competitive feelings. Researchers have found that children who have siblings with intellectual disabilities accommodate the lesser competencies of their siblings by engaging in noncompetitive activities (Stoneman et al., 1987). Less conflict in adult

relationships when one sibling has an intellectual disability may reflect greater empathy and understanding for the shortcomings of their sibling or may be a result of disengagement from the relationship by the non-disabled sibling.

Discriminant analysis was conducted to determine if the clinical and comparison groups could be differentiated based on the adult sibling relationship measures. Results revealed that participants could be accurately classified into their respective groups based on their scores on the Conflict measure of the ASRQ. Participants who had siblings with intellectual disabilities had lower scores on the Conflict subscale. Age did not mediate this outcome. It may be that the siblings' disabilities hinder the participants from quarreling, antagonizing, competing with and domineering over their siblings.

Level of Functioning. Previous studies have found that level of functioning affects sibling relationships (Wilson et al., 1992). It was anticipated that the more severe the intellectual disability, the less positive the adult sibling relationship. In fact, there was no relationship between warmth of the adult sibling relationship and level of intellectual functioning. When two of the observations were deleted, however, the correlation between rivalry and level of functioning was significant. The Rivalry subscale of the ASRQ is a measure of maternal and paternal attention (who the parents favor, support, and are closer to). At higher levels of cognitive impairment, parental attention may be directed toward the sibling with intellectual disabilities, creating feelings of rivalry or resentment in the sibling without an intellectual disability. The relationship between conflict and level of functioning marginally failed to reach significance.

### Sibling Relationships in General

Child and Adult Sibling Relationships. Mutuality, support, and imitation found in childhood sibling relationships are related to the warmth of the adult sibling relationships. It is not surprising that the amount of mutuality and support in childhood is indicative of the warmth of the adult sibling relationship; if siblings are supportive of each other and share common interests in childhood, it would follow that high levels of warmth would be present in their adult relationship. Ross and Milgram (1982) found that the best predictors of closeness in adulthood were positive childhood relationships and shared activities in childhood. Stewart et al., (1998b) also found that children who were categorized as 'buddies' as children reported higher levels of warmth in adult relationships.

Imitation in childhood was also associated with warmth in adult relationships. The Imitation subscale is said to reveal an intention to mimic the actions, interests, or behaviors of the other sibling and is thought to be associated with emotional closeness (Stewart et al., 1998b). Therefore, it seems understandable that level of imitation would be positively correlated with the amount of warmth in adult relationships.

The amount of criticism and imitation in childhood were associated with the amount of conflict in the adult sibling relationship. Siblings that are critical of each other in childhood may encounter conflict in their adult relationship. The pattern of criticism in childhood may extend to a repeating pattern of conflict as the siblings grow older. At first glance, it may seem contradictory that the amount of imitation in childhood can be positively correlated with both warmth and conflict in adult sibling relationships. If an individual mimics the actions, interests, or behaviors of their sibling, it may be interpreted

by siblings in two ways: as an act of closeness and hence seen in a positive light, or as a nuisance or annoyance and interpreted in a negative light. Therefore, depending on how the sibling interprets the act, imitation can be correlated with both warmth and conflict. Imitation can also reflect shared interests between the siblings. Shared interests may create warmth in a sibling relationship, but may also serve as the basis for rivalry.

Sibling rivalry in adulthood was not associated with any aspects of the childhood sibling relationship. Factors independent of the childhood sibling relationship must account for sibling rivalry in adulthood. Ross and Milgram (1982) found that sibling rivalry in adulthood was maintained through parental favoritism, competitive behaviors, feelings of exclusion from family interactions, maintenance of assigned roles/labels, and a lack of communication related to rivalry. Seltzer and Krauss (1993), for example, suggest that the greatest degree of strife between brothers occurs when one attains a more prestigious occupational status than the other.

Family Environment and Sibling Relationships. For the adult sibling relationship, family problems were predictive of the level of warmth, rivalry, and conflict. The more family problems, the less warmth, the more rivalry, and the more conflict in the adult sibling relationship. The amount of conflict in a family was negatively associated with mutuality in childhood sibling relationships. As the family unit encounters more conflict, siblings' acceptance of, affection for, similarity to, and reciprocity from one another decreases. Social climate in the familial environment has been found to be associated with the level of involvement individuals have in the lives of their siblings (Seltzer & Krauss, 1993). According to Family Systems theory, events occurring in any subsystem ultimately affect and are affected by events and circumstances within other subsystems



(Cicirelli, 1991). From that perspective, it is understandable that family problems are associated positively with rivalry and conflict, and associated negatively with warmth, and that conflict in a family is associated with less mutuality in childhood relationships. When the family unit encounters conflict, children may make a choice to distance themselves from both their family and their siblings. This distance may result in lower levels of mutuality in sibling relationships and higher levels of conflict and rivalry.

In the present study, the intellectual-cultural orientation in the family of origin was related to imitation in the childhood sibling relationships and warmth in adult sibling relationships. As individuals are exposed to political, social, intellectual, and cultural activities, they may establish an appreciation and respect for others. This appreciation is likely to filter into sibling relationships in the form of mutual support in childhood and warmth in adulthood. Children who witness their family's and siblings' interest and involvement in political, social, intellectual, and cultural activities may model their behaviors after these interests and activities.

Conflict in adult sibling relationships was associated with conflict and emphasis on achievement orientation in the family. Learned patterns of interactions within the familial environment characterized by conflict and turmoil impact on sibling interactions. Emphasis on achievement in a family may foster competitive feelings among siblings. Warmth in a sibling relationship was associated with cohesion and expressiveness in the family of origin, while rivalry was negatively related to cohesion and expressiveness. Warmth was negatively related and rivalry was positively related to family conflict and family problems. The Cohesion subscale of the FES measures the degree of commitment, help, and support family members provide one another, while the Expressiveness

subscale of the FES taps the extent to which family members are encouraged to openly express their feelings to one another. Siblings may model their interactions with their siblings on the familial interactions they have witnessed. This may account for the relationship between warmth and rivalry in sibling relationships and the amount of cohesion, expressiveness, and conflict in a family. These results are consistent with Ross and Milgram's (1982) finding that closeness in adult sibling relationships is related to childhood familial experiences that emphasize family unity, and Seltzer and Krauss's (1993) suggestion that expressiveness is positively related to, and conflict negatively associated with, the amount of involvement and support individuals offer their siblings.

Age-Spacing and Sibling Relationships. It was hypothesized that siblings closer in age would have more positive relationships. This study found that smaller age-spacing between siblings was associated with more conflict in sibling relationships. It is possible that siblings closer in age spend more time together, and therefore, levels of quarrelling, antagonism, competition and dominance may be higher among closer in age siblings. Given age-spacing was a nonsignificant predictor in the regression model, other variables such as family problems better explained the level of conflict in adult relationships than age-spacing.

### Psychological Functioning in Adulthood

#### Group Differences

The childhood literature suggests that siblings of children with intellectual disabilities are more depressed and more anxious than those who have siblings without disabilities (Rossiter & Sharpe, 1998). As a result, it was predicted that adult participants in the clinical group would have less positive psychological functioning than those in the

comparison group. Burton and Parks (1994) did not find a difference between college students who had siblings with disabilities and college students who had siblings without disabilities on a measure of self-esteem. Unexpectedly, in the current study, participants in the clinical group reported significantly lower levels of anxiety and higher levels of self-esteem than participants in the comparison group. As siblings of persons with intellectual disabilities mature, their anxiety may abate. Given this is the first study to look at a variety of psychological functioning variables in an adult population, replication of these findings is imperative before any definitive conclusions can be made. Given replication of these findings in future studies, however, this result may suggest better coping strategies are adopted by adult siblings of individuals with intellectual disabilities. From the open-ended questions in this research, it was evident that the participants from the clinical group experience overwhelming guilt and embarrassment in childhood and adolescence, but do overcome those feelings by adulthood and may gain strength from this adversity. For example, one participant wrote, "Missing from this questionnaire was our relationship during the teen years...in these years I had to deal with feelings of embarrassment/resentment/jealousy/responsibility." The pressures of adult life may seem insignificant when compared to the experiences of childhood, and this may be reflected in high self-esteem and lower anxiety scores.

To determine if the clinical and comparison groups could be distinguished by their psychological functioning, a discriminant analysis was conducted. Results revealed that participants could be accurately classified into their respective groups by scores on the anxiety subscale of the CAS and, to a much lesser extent, the depression subscale of the CAS. Participants in the comparison group had higher levels of anxiety and more

depression than those in the clinical group. As stated above, individuals who have siblings with intellectual disabilities have lived through adversity and may have learned to cope more effectively as a result of the adversity.

### Sibling Relationships and Psychological Functioning

The amount of conflict in sibling relationships was associated with anxiety, depression, family problems, interpersonal problems, and substance abuse. Rivalry in adult sibling relationships was also linked to depression and family problems. These findings attest to the importance and influence that sibling relationships can have on peoples' lives; psychological functioning in adulthood was related to the quality of sibling relationships. Caution must be taken, however, in the interpretation of these findings given the causal pathway of this relationship is untested. It may be that the anxiety, depression, substance abuse, and/or interpersonal difficulties cause both conflict in adult sibling relationships and family problems.

### Family Environment and Psychological Functioning

Level of conflict in a family was related to anxiety, depression, and family problems. Achievement-Orientation was related to interpersonal problems. Level of expressiveness in a family was negatively related to depression, family problems, and interpersonal problems. When correlational analyses were conducted separately for the clinical and the comparison group, the only significant difference between the groups that emerged was that level of expressiveness in the family of origin was related to self-esteem for the clinical group. Expressiveness and openness may be particularly important when there is a child with intellectual disabilities in the family. Lack of communication and the ability to express oneself in a family when there is a child with a disability may

lead to lower self-esteem in the non-disabled sibling. If individuals do not have a forum to express their fears surrounding their sibling's disability and their frustration relating to perceived greater attention given to their sibling with a disability, self-esteem in adulthood may be affected. Given the relationships between family environment and adult psychological functioning, it is evident that familial environment in childhood is an important determinant of individual well-being in adulthood.

### Familial Environment

Family Systems Theory suggests that what happens within any subsystem ultimately affects and is affected by events and circumstances within the other subsystems (Cicirelli, 1991). As a result, it was predicted that having a sibling with an intellectual disability would affect the familial environment. The only significant differences between the clinical and comparison groups was found on the Organization subscale of the FES. This subscale measures the importance of organization and structure in planning family activities and responsibilities (Moos & Moos, 1994). It appears that when there is a family member with an intellectual disability, the family needs to be better organized and plan ahead. Given the amount of care and responsibility it takes to raise a child with an intellectual disability, it is not surprising that families become very organized and structured; family members have clearly defined duties and responsibilities so that their lives run more efficiently.

Participants in the clinical group scored slightly higher on the Moral-Religious Emphasis subscale of the FES, a finding that marginally failed to reach significance. This subscale measures the degree of emphasis on ethical and religious issues and values, such as how often people go to church and how much people believe there are some things that

must be accepted on faith (Moos & Moos, 1994). This trend may be a result of parents' search for meaning and explanation when they have a child with an intellectual disability. Families who face adversity often cope by seeking solace in religion (Rogers-Dulan, 1998).

### Sex Differences

Previous studies have found that females have more positive sibling relationships than males (Pulakos, 1990). In the present study, the only significant difference between females and males was on the Longing subscale of the Sibling Type-Now questionnaire. This subscale measures an individual's yearning for the return of something lost or the attainment of something unfulfilled or beyond reach with respect to their sibling (Stewart, et al., 1998). This finding must be interpreted with caution given the low internal consistency of this subscale. In addition, the fact that there were only four males in each of the clinical and comparison groups may have influenced the results.

### Group Differences on Matching Variables

One crucial task was to determine if the clinical and comparison groups differed on any of the matching variables. Preliminary analysis indicated that participants in the clinical group were significantly older than those in the comparison group. To control for age as a confound, correlations were conducted between age and all dependent measures. Results revealed that age was correlated with a number of dependent measures. As a consequence, when any of these dependent measures reached significance in any of the analyses, the analysis was rerun with age as a covariate. Younger participants have more conflict in their sibling relationships, more interpersonal problems, more substance abuse problems, and more ability to transpose imaginatively into fictional situations.

The comparison and clinical groups also differed on student status. Because the comparison group was taken from a university population and the clinical group was recruited from a university population and from a community sample, more participants from the comparison group were students. To determine if differences found between the clinical and comparison groups were due to student status, comparisons were made between the student and nonstudents of the clinical group on all dependent measures. No significant differences were found. Therefore, it was concluded that any differences found between the clinical and the comparison group was due to the presence or absence of a sibling with an intellectual disability versus student status.

#### Qualitative Information

To measure the quality of the sibling relationship when one the siblings has intellectual disabilities, previous studies have used questionnaires normed on the general population. As the responses from the qualitative questions revealed, the nature of the sibling relationship may be quite different when one of the siblings has an intellectual disability. Fifty-two percent of participants in the clinical group recognized that a number of the items on the standardized questionnaires were not applicable to their sibling relationships. To determine if differences existed between participants who reported the questionnaire was applicable and those who did not, comparisons were made between those two groups on all dependent measures. The only difference found was on the independence subscale of the FES. Participants who stated the questionnaire was applicable came from families that fostered greater independence. It may be that some individuals are less willing to admit differences between their sibling relationship and other sibling relationships for fear that differences be seen as an excuse for the quality of

their adult sibling relationship or their psychological functioning. Given the low internal consistency of the Independence subscale, this finding must be interpreted with caution. Participants who thought the questionnaire was not applicable found it difficult to answer many of the items due to their siblings' limited verbal abilities. Given that many items on the standardized instruments employed a forced-choice response format, participants stated their answers to many items did not reflect their true thoughts and feelings.

Participants mentioned a number of the content areas on the standardized questionnaires were inapplicable with respect to their sibling relationship. In addition, participants felt that many aspects of their sibling relationship were not covered in the standardized questionnaire. Given this information, it is more difficult to interpret the quantitative findings; comparisons between participants who have siblings with intellectual disabilities and those who do not have siblings with intellectual disabilities may not be valid. Content areas such as embarrassment, resentment, time spent in personal care, education, behavior problems, protecting the siblings, etc., are important aspects of the sibling relationship that are not necessarily aspects of sibling relationships when neither of the sibling has intellectual disabilities. Therefore, statements regarding differences between the two groups should be interpreted with caution.

It is important to note that previous studies concerning sibling relationships when one of the siblings has intellectual disabilities have used standardized questionnaires to assess sibling relationships. Given that aspects of this special sibling relationship are missing from the standardized questionnaires, it may be possible that important aspects of sibling relationships may be missing from previous literature and that comparisons between clinical and comparison groups may not reflect a complete representation of



sibling relationships when one of the siblings has an intellectual disability. Future researchers must be cognizant of the potential information that may be missed when only standardized questionnaires are used with this population.

### Limitations, Contributions, and Recommendations for Future Research

#### Limitations

Sample Issues. One of the limitations of this study is the difference between the clinical and comparison groups. Participants from the comparison group were recruited from a university population, whereas participants from the clinical group were recruited from both university and community samples. Initially, it was anticipated that enough individuals who have siblings with intellectual disabilities would be recruited from a university population. However, due to the low response from the university population, recruitment from the community was necessary.

A second sampling issue is a potential response bias by individuals who chose to participate in the study. Recruitment notices were sent to families of individuals with intellectual disabilities through various community organizations and were posted in community organization newsletters. There may have been a response bias, i.e., individuals who responded may have been different in some respect than those who decided not to participate. It may be that individuals who chose to participate in the study are active in their sibling's lives and are therefore interested in participating in a study concerning sibling relationships. Some other individuals may have agreed to participate because they do not have a positive relationship with their sibling and wanted this opportunity to vent their frustrations with their sibling (Stewart et al., 1998). Given that results from this study revealed participants who had siblings with intellectual disabilities

rated their sibling relationships as more favorable, this sampling technique may have biased the data by recruiting individuals with positive sibling relationships.

Because recruitment of individuals who have siblings with intellectual disabilities was more difficult than anticipated, the sample size was considerably smaller than expected. Due to the small sample size, the use of multivariate statistics was limited.

Measures. Another limitation to this study is that the dependent measures were self-report. Inherent within this method of research is the chance of obtaining biased and selective data (Schwarz, 1999). In addition, the Sibling Type-Then is a retrospective measure of sibling relationships in childhood. Longitudinal data would provide a more accurate picture of the effects on sibling relationships and psychological functioning when one sibling has an intellectual disability. Given the logistic and financial difficulties inherent with longitudinal studies, this method of examination was not feasible for the present study.

In addition, there were some difficulties with the use of the Sibling Type-Then questionnaire. The items were worded according to the birth-order of the sibling. For example, one item stated, "The older sibling would provide care for the younger sibling." On the caregiving scale, if participants had an older sibling without a disability, they could answer according to their birth-order status. Given the older child often provides caretaking for younger child in sibling relationships when neither has disabilities (Stoneman & Brody, 1993), the results would reflect actual levels of caregiving in the relationship. If a participant had an older sibling with a disability, they might endorse the response, 'Hardly at All' but the response could mean something different for their sibling relationship. If the younger sibling was the non-disabled sibling and he/she

provided the caretaking for the sibling with a disability, then the response might be 'Hardly at All', even though caretaking did exist in the relationship but was provided by the younger sibling. Therefore, the use of the Sibling Type-Then Questionnaire with sibling relationships when one of the siblings has an intellectual disability was problematic; only data from participants who were older than their sibling with disabilities could be used for this measure.

The CAS is a standardized questionnaire normed on a university/college population. One of the limitations of this study was that the CAS was administered to a community sample. There were significant differences between the responses of the university and community samples on various subscales of the CAS. When responses from student versus non-student participants in the clinical group were examined, no differences were found. This may suggest that differences found between the clinical and comparison groups were due to the presence or absence of a sibling with a disability versus student/non-student status. Although the CAS is normed on a university population, it is highly correlated with various instruments (e.g., Beck Depression Inventory) that have been normed on the general population. Given these arguments, the results from the instrument are thought to reflect actual differences between the clinical and comparison groups.

Although the FES is a widely used measure of important aspects of family functioning, there has been some controversy concerning the psychometric properties of and the convergent validity for the scale (Sanford, Bingham, & Zucker, 1999). Originally, the scale was developed with an emphasis on construct breadth versus internal consistency. As a result, Moos argues that alpha coefficients ranging from .64 to .79 are

appropriate. Sanford et al., (1999) argue that the key validation issues regarding the internal psychometric properties of the FES is the degree to which the existing 10 subscales fit a 10 dimensional confirmatory factor analysis. These authors also argue that lack of convergent validity for this scale is understandable, given few other scales exist that tap similar constructs. In a study assessing the validity of the instrument with families who have an alcoholic parent, Sanford et al. found that the following six scales fit a confirmatory factor analysis: Cohesion, Conflict, Intellectual-Cultural Orientation, Active-Recreational, Moral-Religious, and the Organization scale. Sanford et al. caution exclusively using these six scales with other populations until further research has replicated this six dimensional model with other populations.

In the current study, the alpha coefficients for the subscales were respectable (.70 to .81), with the exception of the Achievement-Oriented (.33) and the Independence (.54) subscales. These subscales were two of the four subscales found to have poor psychometric properties in the Sanford et al. (1999) study. As a result, caution must be used when interpreting findings for the Achievement-Oriented and Independence subscales.

Data Analyses. Much of the data analyses in this study was correlational. The nature of correlational data prevents speculation on the causation and the direction of the relationship between variables. Many of the findings in this study have been interpreted in terms of what the expected direction of the relationship between variables was. However, the possibility exists that the direction of the relationship between some variables may actually be the opposite to what was hypothesized. For example, it was predicted that sibling relationships would have an impact on adult psychological functioning. A

relationship was found between these two variables. However, it may be that psychological functioning of adults has an impact on sibling relationships. Therefore, it is difficult to make definitive conclusions concerning the relationship between the variables in this study.

Nature of Disabilities. The disabilities of the siblings of participants in this study were heterogeneous. Ten of the participants in the clinical group had siblings with Down Syndrome. One of the participants had a sibling with brain damage due to a virus, one with Vasculitis, and one whose mother contracted German Measles during pregnancy. The remaining nine participants did not have a specific diagnosis. These different diagnoses may have impacted on psychological functioning and sibling relationships in ways that could not be assessed in this study. Furthermore, these different diagnoses may limit the generalizability of these findings to studies with more homogeneous populations. In the same vein, siblings of participants with the same disability may have quite different levels of functioning. For example, one sibling with Down Syndrome may be mildly cognitively affected such that the sibling relationship and psychological functioning of their siblings should not be affected. In contrast, another sibling with Down Syndrome who is profoundly cognitively affected may have a qualitatively different relationship with their sibling and the impact on the family may be substantial.

Potential Confounds. Potential confounds in this study were age, birth-order, and student-status. Preliminary analysis indicated that participants in the clinical group were significantly older than those in the comparison group. To control for age as a confound, correlations were conducted between age and all dependent measures. Results revealed that age was correlated with a number of dependent measures. As a consequence, when

any of these variables reached significance in any of the analyses, the analysis was rerun with age as a covariate. Therefore, any differences found between the clinical and comparison groups could not be attributed to age differences between groups.

Although there was no differences in birth-order across groups for participants in this study, there was a statistically significant difference between the birth-order of the siblings of participants in the clinical and comparison groups. There were more second-borns in the comparison group and more first-borns in the clinical group. In other words, more participants in the clinical group were the younger siblings.

Given the comparison group was recruited from a university sample and the clinical group from a university and community sample, it was important to determine if the comparison and clinical groups differed on the basis of student status. To determine if differences found between the clinical and comparison groups were due to student status versus absence or presence of a sibling with a disability, comparisons were made between the student and nonstudents of the clinical group on all dependent measures. Because no significant differences were found, it was concluded that any differences found between the clinical and comparison groups was due to the presence or absence of a sibling with an intellectual disability versus student status.

Lack of Theoretical Basis. The research on sibling relationships when one of the siblings has intellectual disabilities is not grounded in one particular theoretical framework. Seltzer and Krauss (1993) identify the following theoretical perspectives as relevant to the study of sibling relationships in adulthood: Lifespan Development, Attachment, and Exchange Theory. Theories of lifespan development are relevant given their emphasis on normative and nonnormative events, and how these events lead to

either stability of discontinuity in human development. The developmental research on sibling relationships throughout the life-span has been investigated in normative sibling relationships. In contrast, the developmental consequences of nonnormative sibling relationships, i.e., when one of the siblings has intellectual disabilities, has received minimal theoretical analysis (Seltzer & Krauss, 1993). Research that has been conducted on sibling relationships when one of the siblings has intellectual disabilities has been cross-sectional. "The lifelong developmental sequelae of having sibling with a disability have yet to be investigated" (Seltzer & Krauss, 1993).

Although attachment theories focused originally on infancy, there has been a growing emphasis on attachment throughout the lifespan (Ainsworth, 1989). Attachment theorists perceive the sibling relationship as one that persists throughout a lifetime, even though this attachment takes different forms throughout the lifecourse. Research has yet to determine how attachments differ from the norm when one of the siblings has an intellectual disability (Seltzer & Krauss, 1993).

The exchange theory focuses on the interactions among people and explains social relationships in terms of 'give and take' (Seltzer & Krauss, 1993). Sibling relationships are generally conceptualized in terms of balanced reciprocity, a term used to describe a equitable pattern of exchanges. However, when one of the siblings has disabilities, a shift in reciprocity may occur such that the relationship may be conceptualized in terms of a generalized reciprocity, in which individuals give without the expectation of repayment. Generalized reciprocity is typically seen in parent-child relationships (Seltzer & Krauss, 1993).

In addition to these three theories, the Family Systems Theory can be helpful in understanding the complex interactions that occur in sibling relationships. It is difficult to ascertain the effects of having a child with intellectual disabilities on the siblings without examining the familial pattern of interactions. Family Systems theory proposes that people are part of a social context, and to understand the individual, one must understand the family. This theory suggests that what happens within any subsystem ultimately affects and is affected by events and circumstances within the other subsystems (Cicirelli, 1991). In the current study, sibling relationships were investigated in the context of the familial environment.

Without a single theory to guide research into sibling relationships and psychological functioning when one of the siblings has intellectual disabilities, researchers must borrow relevant and applicable elements from many theories. The lifespan development, attachment, exchange, and family systems theories provide important contributions to understanding the complex interactions of siblings when one of the siblings has an intellectual disability.

#### Contributions and Recommendations for Future Research

This study was the first to assess psychological functioning in adult siblings of individuals with intellectual disabilities. Given the somewhat negative findings from the childhood literature, it was imperative to determine if psychological effects seen in children continue into adulthood. Findings from this study indicate that individuals who have siblings with intellectual disabilities are not at an increased risk for developing psychological problems in adulthood. Having a sibling with an intellectual disability may enhance psychological functioning; siblings may develop higher self-concept and lower



anxiety in adulthood. Because this is the first study to investigate psychological functioning in adult siblings of individuals with intellectual disabilities, it is important these findings be replicated before definitive conclusions be made. Researchers should continue to investigate psychological functioning in this population to determine if other variables, such as type of disability, have an effect on adult functioning.

This study contributed to a growing body of literature that seeks to investigate the sibling relationships in adulthood when one of the siblings has intellectual disabilities. Given the importance of the sibling relationship to social development (Banks & Kahn, 1982) and the possibility that individuals will care for their siblings in adulthood, it is imperative to understand the quality of sibling relationships when one of the siblings has an intellectual disability. Because of the significant role sibling relationships play in the lives of individuals with intellectual disabilities, it was important to determine if methods of previous studies were applicable to sibling relationships when one of the siblings has intellectual disabilities.

Participants' responses to open-ended questions revealed aspects of sibling relationships that have been missed in previous studies because of the reliance on standardized questionnaires. Many items on standardized questionnaires may be inapplicable when one sibling has an intellectual disability. Investigators must be cognizant of the use of standardized questionnaires in this area of research. Future researchers should consider employing questions tailored specifically to siblings of individuals with intellectual disabilities so that important elements of their relationships and functioning are not missed. Future use of qualitative research methodology may

highlight pertinent information unique to siblings of individuals with intellectual disabilities.

The results from this study provide encouragement to families when a family member has an intellectual disability. Parents of children with disabilities are often concerned about the impact that having a child with a disability may have on the typically developing sibling. Clinicians can provide families with some positive information. Although some studies have found negative consequences for siblings of individuals with intellectual disabilities in childhood (Rossiter & Sharpe, 1998), in the long run, having a sibling with an intellectual disability can have positive consequences as the siblings progress through the lifespan. Counselling can provide help and reassurance to siblings of individuals with intellectual disabilities through difficult times. It is important to reassure families that although there will be challenging times in the life of the typically developing sibling, having a sibling with a disability can be a tremendous source of joy and an experience that may enhance their lives.

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### Instructions and Basic Information

This questionnaire is concerned with your relationship with one of your siblings. Each question asks you to rate how much different behaviors and feelings occur in your relationship. Try and answer each question as quickly and accurately as you can. Try and answer the questions as your relationship is now, not how it was in the past, nor how you think it might be in the future. In the remainder of the questionnaire, whenever you see **THIS SIBLING** or **YOUR SIBLING** we are talking about the specific sibling you are completing the study about. We begin by asking you some general questions about your sibling and yourself. Please fill in or circle the correct response.

1a) Your age \_\_\_\_\_ 1b) This sibling's age \_\_\_\_\_  
 2a) Your gender: Male Female 2b) This sibling's gender: Male Female

3a) Your birth order: 1 = firstborn, 2 = secondborn, 3 = thirdborn, 4 fourthborn, 5 = laterborn  
 3b) This sibling's birth order: 1 = firstborn, 2 = secondborn, 3 = thirdborn, 4 fourthborn, 5 = laterborn

How far does this sibling live from you? (circle the correct response)

- |  |                               |
|--|-------------------------------|
| 1) same city                           | 4) between 200 and 500 miles  |
| 2) different city, less than 100 miles | 5) between 500 and 1000 miles |
| 3) between 100 & 200 miles             | 6) more than 1,000 miles      |

How much do you and this sibling see each other?

- 1 Hardly At All    2 A Little    3 Somewhat    4 Very Much    5 Extremely Much

How much does this sibling phone you?

- 1 Hardly At All    2 A Little    3 Somewhat    4 Very Much    5 Extremely Much

How much do you phone this sibling?

- 1 Hardly At All    2 A Little    3 Somewhat    4 Very Much    5 Extremely Much

How much do you and this sibling see each other for holidays and family gatherings?

- 1 Hardly At All    2 A Little    3 Somewhat    4 Very Much    5 Extremely Much

What is your relationship to this sibling?

- |                       |                                 |                 |
|-----------------------|---------------------------------|-----------------|
| 1) biological sibling | 2) twin                         | 3) step sibling |
| 4) half sibling       | 5) other (please explain) _____ |                 |

*Now we would like some information about your **other** siblings*

**DO NOT INCLUDE THIS SIBLING HERE**

Age	Gender	Relationship (bio, step, twin)	Age	Gender	Relationship (bio, step, twin)
Sib #1	___ M F	_____	Sib #5	___ M F	_____
Sib #2	___ M F	_____	Sib #6	___ M F	_____
Sib #3	___ M F	_____	Sib #7	___ M F	_____
Sib #4	___ M F	_____	Sib #8	___ M F	_____

- 1) *How much do you and this sibling have in common?*  
 1 Hardly Anything  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 2) *How much do you talk to this sibling about things that are important to you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 3) *How much does this sibling talk to you about things that are important to him or her?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 4) *How much do you and this sibling argue with each other?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 5) *How much does this sibling think of you as a good friend?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 6) *How much do you think of this sibling as a good friend?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 7) *How much do you irritate this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 8) *How much does this sibling irritate you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 9) *How much does this sibling admire you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 10) *How much do you admire this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 11) *Do you think your mother favors you or this sibling more?*  
 1 I am usually favored  
 2 I am sometimes favored  
 3 Neither of us is favored  
 4 This sibling is sometimes favored  
 5 This sibling is usually favored
- 12) *Does this sibling think your mother favors him/her or you more?*  
 1 I am usually favored  
 2 I am sometimes favored  
 3 Neither of us is favored  
 4 This sibling is sometimes favored  
 5 This sibling is usually favored
- 13) *How much does this sibling try to cheer you up when you are feeling down?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 14) *How much do you try to cheer this sibling up when he or she is feeling down?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 15) *How competitive are you with this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 16) *How competitive is this sibling with you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 17) *How much does this sibling go to you for help with non-personal problems?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 18) *How much do you go to this sibling for help with non-personal problems?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 19) *How much do you dominate this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 20) *How much does this sibling dominate you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 21) *How much does this sibling accept your personality?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

22) *How much do you accept this sibling's personality?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

23) *Do you think your father favors you or this sibling more?*

- 1 I am usually favored  
 2 I am sometimes favored  
 3 Neither of us is favored  
 4 This sibling is sometimes favored  
 5 This sibling is usually favored

24) *Does this sibling think your father favors him/her or you more?*

- 1 I am usually favored  
 2 I am sometimes favored  
 3 Neither of us is favored  
 4 This sibling is sometimes favored  
 5 This sibling is usually favored

25) *How much does this sibling know about you?*

- 1 Hardly Anything  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

26) *How much do you know about this sibling?*

- 1 Hardly Anything  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

27) *How much do you and this sibling have similar personalities?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

28) *How much do you discuss your feelings or personal issues with this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

29) *How much does this sibling discuss his or her feelings or personal issues with you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

30) *How often does this sibling criticize you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

31) *How often do you criticize this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

32) *How close do you feel to this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

33) *How close does this sibling feel to you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

34) *How often does this sibling do things to make you mad?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

35) *How often do you do things to make this sibling mad?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

36) *How much do you think that this sibling has accomplished a great deal in life?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

37) *How much does this sibling think that you have accomplished a great deal in life?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

38) *Does this sibling think your mother supports him/her or you more?*

- 1 I usually get more support  
 2 I sometimes get more support  
 3 We are supported equally  
 4 This sibling sometimes gets more support  
 5 This sibling usually gets more support

39) *Do you think your mother supports you or this sibling more?*

- 1 I usually get more support  
 2 I sometimes get more support  
 3 We are supported equally  
 4 This sibling sometimes gets more support  
 5 This sibling usually gets more support

40) *How much can you count on this sibling to be supportive when you are feeling stressed?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

41) *How much can this sibling count on you to be supportive when he or she is feeling stressed?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

42) *How much does this sibling feel jealous of you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

43) *How much do you feel jealous of this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

44) *How much do you give this sibling practical advice? (e.g. household or car advice)*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

45) *How much does this sibling give you practical advice?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

46) *How much is this sibling bossy with you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

47) *How much are you bossy with this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

48) *How much do you accept this sibling's lifestyle?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

49) *How much does this sibling accept your lifestyle?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

50) *Does this sibling think your father supports him/her or you more?*

- 1 I usually get more support  
 2 I sometimes get more support  
 3 We are supported equally  
 4 This sibling sometimes gets more support  
 5 This sibling usually gets more support

51) *Do you think your father supports you or this sibling more?*

- 1 I usually get more support  
 2 I sometimes get more support  
 3 We are supported equally  
 4 This sibling sometimes gets more support  
 5 This sibling usually gets more support

52) *How much do you know about this sibling's relationships?*

- 1 Hardly Anything  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

53) *How much does this sibling know about your relationships?*

- 1 Hardly Anything  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

54) *How much do you and this sibling think alike?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

55) *How much do you really understand this sibling?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

56) *How much does this sibling really understand you?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

57) *How much does this sibling disagree with you about things?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

- 58) *How much do you disagree with this sibling about things?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 59) *How much do you let this sibling know you care about him or her?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 60) *How much does this sibling let you know he or she cares about you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 61) *How much does this sibling put you down?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 62) *How much do you put this sibling down?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 63) *How much do you feel proud of this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 64) *How much does this sibling feel proud of you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 65) *Does this sibling think your mother is closer to him/her or you?*  
 1 Our mother is usually closer to me  
 2 Our mother is sometimes closer to me  
 3 Our mother is equally close to both of us  
 4 Our mother is sometimes closer to this sibling  
 5 Our mother is usually closer to this sibling
- 66) *Do you think your mother is closer to you or this sibling?*  
 1 Our mother is usually closer to me  
 2 Our mother is sometimes closer to me  
 3 Our mother is equally close to both of us  
 4 Our mother is sometimes closer to this sibling  
 5 Our mother is usually closer to this sibling
- 67) *How much do you discuss important personal decisions with this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 68) *How much does this sibling discuss important personal decisions with you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 69) *How much does this sibling try to perform better than you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 70) *How much do you try to perform better than this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 71) *How likely is it you would go to this sibling if you needed financial assistance?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 72) *How likely is it this sibling would go to you if he or she needed financial assistance?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 73) *How much does this sibling act in superior ways to you?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 74) *How much do you act in superior ways to this sibling?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 75) *How much do you accept this sibling's ideas?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 76) *How much does this sibling accept your ideas?*  
 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much

---

77) *Does this sibling think your father is closer to him/her or you?*

- 1 Our father is usually closer to me  
 2 Our father is sometimes closer to me  
 3 Our father is equally close to both of us  
 4 Our father is sometimes closer to this sibling  
 5 Our father is usually closer to this sibling
- 

78) *Do you think your father is closer to you or this sibling?*

- 1 Our father is usually closer to me  
 2 Our father is sometimes closer to me  
 3 Our father is equally close to both of us  
 4 Our father is sometimes closer to this sibling  
 5 Our father is usually closer to this sibling
- 

79) *How much do you know about this sibling's ideas?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 

80) *How much does this sibling know about your ideas?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
- 

81) *How much do you and this sibling lead similar lifestyles?*

- 1 Hardly At All  2 A Little  3 Somewhat  4 Very Much  5 Extremely Much
-



## You and Your Sibling -- Now

We would like you to read the following statements and then indicate how well each describes your relationship with your sibling today.

**1. Hardly At all    2. A Little    3. Somewhat    4. Very Much    5. Extremely Much**

- 1. The older sibling is bossy with the younger sibling.
- 2. I offer nurturance, advice, assurance, and/or self validation to my brother/sister.
- 3. My brother/sister often tells me that he/she loves me.
- 4. My brother/sister provides me with feelings of acceptance and approval.
- 5. I express little concern for my brother/sister.
- 6. The older sibling irritates the younger sibling.
- 7. I provide my brother/sister with emotional support.
- 8. The younger sibling often worries about the older sibling.
- 9. The younger sibling does not find the older sibling to be very interesting.
- 10. I realize that my sibling and I live different lifestyles today.
- 11. The younger sibling tries to out-perform the older sibling.
- 12. My sibling and I have always been different so we spend little, if any, time talking or getting together.
- 13. I value and respect the opinion of my brother/sister.
- 14. The younger sibling acts as if he/she is superior to the older sibling.
- 15. My brother/sister and I share little, if any, common interests and/or experiences.
- 16. When my brother/sister is sad or unhappy, I try to cheer him/her up.
- 17. My brother/sister and I hardly ever see each other anymore.
- 18. The younger sibling is bossy with the older sibling.
- 19. The older sibling tries to out-perform the younger sibling.
- 20. My brother/sister and I are not that close because we lead very busy lives and/or live great distances apart.
- 21. The younger sibling often criticizes the older sibling.
- 22. I often tell my brother/sister that I love him/her.
- 23. My brother/sister provides me with emotional support,

1. **Hardly At All**    2. **A Little**    3. **Somewhat**    4. **Very Much**    5. **Extremely Much**

- \_\_\_ 24. My brother/sister and I seem to have very little time to spend together.
- \_\_\_ 25. My brother/sister seems to always be trying to be better than me.
- \_\_\_ 26. I feel emotionally close to my brother/sister.
- \_\_\_ 27. My brother/sister and I have grown so far apart that there is little effort directed toward building a closer relationship.
- \_\_\_ 28. The older sibling is competitive with the younger sibling.
- \_\_\_ 29. My brother/sister expresses little interest in me and seems to be caught up in his/her own life.
- \_\_\_ 30. I feel very close to my brother/sister.
- \_\_\_ 31. At time, I still resent my younger brother/sister.
- \_\_\_ 32. The younger sibling is always trying to tell the older sibling what he/she "should" do.
- \_\_\_ 33. The older sibling does not find the younger sibling to be very interesting.
- \_\_\_ 34. The older sibling envies the younger sibling.
- \_\_\_ 35. I provide my brother/sister with feelings of acceptance and approval.
- \_\_\_ 36. The younger sibling irritates the older sibling.
- \_\_\_ 37. I have made very little impact on my brother/sister.
- \_\_\_ 38. The older sibling tries to dominate the younger sibling.
- \_\_\_ 39. My brother/sister and I are very good friends.
- \_\_\_ 40. The younger sibling is competitive with the older sibling.
- \_\_\_ 41. Being close to my brother/sister is not very important to me.
- \_\_\_ 42. The older sibling often criticizes the younger sibling.
- \_\_\_ 43. The younger sibling envies the older sibling.
- \_\_\_ 44. My brother/sister and I are very attached to one another.
- \_\_\_ 45. My sibling and I tend to argue a lot.
- \_\_\_ 46. I admire my brother/sister very much.
- \_\_\_ 47. The younger sibling tries to dominate the older sibling.
- \_\_\_ 48. My sibling expresses little concern for me.

**1. Hardly At All    2. A Little    3. Somewhat    4. Very Much    5. Extremely Much**

\_\_\_ 49. The older sibling is always trying to tell the younger sibling what he/she "should" do.

\_\_\_ 50. My brother/sister has very little impact on my life.

## You and Your Sibling -- Then

We would like you to read the following statements and indicate how well each of them describes the relationship you had with your sibling when you were approximately 5 to 8 years of age.

**1. Hardly At All    2. A Little    3. Somewhat    4. Very Much    5. Extremely Much**

- \_\_\_ 1. The older sibling took pleasure in providing care for the younger sibling.
- \_\_\_ 2. The days of the younger sibling were filled with outside interests, and the presence of an older sibling did not appear to have much of an impact on his/her life.
- \_\_\_ 3. The younger sibling tended to criticize the older sibling.
- \_\_\_ 4. Interactions between the siblings were characterized by "playfulness" and "reciprocity."
- \_\_\_ 5. The older sibling would provide care for the younger sibling.
- \_\_\_ 6. The younger sibling tended to do his/her own thing, and often had lots of other more exciting activities than interacting with the older sibling.
- \_\_\_ 7. The older sibling viewed him/herself as responsible for the younger sibling.
- \_\_\_ 8. The older sibling played "rough" with the younger sibling in order to let the younger sibling know "Who's Boss."
- \_\_\_ 9. The siblings enjoyed playing together.
- \_\_\_ 10. When the older sibling did something, the younger sibling also wanted to do it.
- \_\_\_ 11. The older sibling felt close to the younger sibling.
- \_\_\_ 12. The older sibling would concern him/herself with making the younger sibling do what was "right" rather than allowing any inappropriate behavior.
- \_\_\_ 13. The older sibling would tease and/or make fun of the younger sibling.
- \_\_\_ 14. The siblings shared many common interests and/or experiences together.
- \_\_\_ 15. The younger sibling enjoyed entertaining and playing with the older sibling.
- \_\_\_ 16. My brother/sister and I were very "attached" to one another.
- \_\_\_ 17. The younger sibling experienced their role with the older sibling as that of a friend or a "buddy."
- \_\_\_ 18. The siblings were always trying to out-perform each other.
- \_\_\_ 19. The parents "trusted" the older sibling to care for the younger sibling.
- \_\_\_ 20. The younger sibling would do things to make the older sibling either look bad or get in trouble.
- \_\_\_ 21. The siblings enjoyed playing together as much as with their friends.

1. **Hardly At All**    2. **A Little**    3. **Somewhat**    4. **Very Much**    5. **Extremely Much**

- \_\_\_ 22. The older sibling tended to criticize the younger sibling.
- \_\_\_ 23. Interactions between siblings more closely resembled that of a parent-child relationship than a peer relationship.
- \_\_\_ 24. Arguments between the siblings were common and often fights became physical.
- \_\_\_ 25. The older sibling provided assistance to the parents in caring for with the younger sibling.
- \_\_\_ 26. The younger sibling took pride in being the older sibling's brother/sister.
- \_\_\_ 27. The older sibling's relationship with the younger sibling lacked emotional closeness.
- \_\_\_ 28. The younger sibling wanted to be "just-like" the older sibling.
- \_\_\_ 29. The parents viewed the older sibling as responsible for babysitting the younger sibling when needed.
- \_\_\_ 30. The younger sibling was responsive to the older sibling's feelings and behavior.
- \_\_\_ 31. The older sibling would do things to make the younger sibling either look bad or get in trouble.
- \_\_\_ 32. The older sibling invested little time and effort into building a relationship with the younger sibling.
- \_\_\_ 33. The younger sibling would help the older sibling with his/her chores.
- \_\_\_ 34. The younger sibling tried to dominate the older sibling.
- \_\_\_ 35. The parents deliberately solicited help from the older sibling in caring for the younger sibling.
- \_\_\_ 36. The younger sibling expressed pleasure in being with the older sibling.
- \_\_\_ 37. The older sibling assumed a position of authority with the younger sibling.
- \_\_\_ 38. The older sibling had little interest in the younger sibling and saw the younger sibling as "no big deal."
- \_\_\_ 39. The younger sibling was always trying to defend him/herself against the older sibling.
- \_\_\_ 40. Whenever the older sibling was sad or unhappy, the younger sibling would try to cheer the older sibling up.
- \_\_\_ 41. The younger sibling irritated the older sibling.
- \_\_\_ 42. The older sibling did not find the younger sibling to be very interesting.
- \_\_\_ 43. The younger sibling was sensitive to the needs and feelings of the older sibling.
- \_\_\_ 44. The younger sibling treated the older sibling with respect.

Sibling Type Then

page 3

**1. Hardly At All    2. A Little    3. Somewhat    4. Very Much    5. Extremely Much**

- \_\_\_ 45. The older sibling tended to do his/her own thing, and often had lots of other more exciting activities than interacting with the younger sibling.
- \_\_\_ 46. The younger sibling admired the older sibling.
- \_\_\_ 47. The older sibling always acted as if he/she was the younger sibling's parent.
- \_\_\_ 48. The younger sibling enjoyed receiving care from the older sibling.
- \_\_\_ 49. The siblings both preferred to be with their own friends, rather than with each other.
- \_\_\_ 50. The older sibling expressed pride in being responsible for the younger sibling.

Respond to each of the following items by circling the appropriate number.

1. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

2. I really get involved with the feelings of the characters in a novel.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

3. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

4. After seeing a play or movie, I have felt as though I were one of the characters.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

5. I daydream and fantasize, with some regularity, about things that might happen to me.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

6. Becoming extremely involved in a good book or movie is somewhat rare for me.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

7. When I watch a good movie, I can very easily put myself in the place of a leading character.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

8. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

9. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

10. I sometimes try to understand my friends better by imagining how things look from their perspective.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

11. I believe that there are two sides to every question and try to look at them both.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

12. I sometimes find it difficult to see things from the "other guy's" point of view.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

13. I try to look at everybody's side of a disagreement before I make a decision.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

14. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

15. When I see someone being taken advantage of, I feel kind of protective towards them.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

16. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

17. I often have tender, concerned feelings for people less fortunate than me.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

18. I would describe myself as a pretty soft-hearted person.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

19. Sometimes I don't feel very sorry for other people when they are having problems.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well

20. Other people's misfortunes do not usually disturb me a great deal.

0                      1                      2                      3                      4  
 does not describe me well                      describes me very well



21. I am often quite touched by things that I see happen.

0 1 2 3 4  
does not describe me well describes me very well

22. When I see someone who badly needs help in an emergency, I go to pieces.

0 1 2 3 4  
does not describe me well describes me very well

23. I sometimes feel helpless when I am in the middle of a very emotional situation.

0 1 2 3 4  
does not describe me well describes me very well

24. In emergency situations, I feel apprehensive and ill-at-ease.

0 1 2 3 4  
does not describe me well describes me very well

25. I am usually pretty effective in dealing with emergencies.

0 1 2 3 4  
does not describe me well describes me very well

26. Being in a tense emotional situation scares me.

0 1 2 3 4  
does not describe me well describes me very well

27. When I see someone hurt, I tend to remain calm.

0 1 2 3 4  
does not describe me well describes me very well

28. I tend to lose control during emergencies.

0 1 2 3 4  
does not describe me well describes me very well

## Appendix A: SES

Please check the category that best describes your family's combined level of income while you were growing up?

- \_\_\_\_\_ Under \$10,000
- \_\_\_\_\_ \$10,000 - \$20,000
- \_\_\_\_\_ \$20,000 - \$30,000
- \_\_\_\_\_ \$30,000 - \$40,000
- \_\_\_\_\_ \$40,000 - \$50,000
- \_\_\_\_\_ \$50,000 - and above

## Appendix A: Level of Functioning

Please circle the item that best exemplifies your sibling's level of functioning:

1. Mild Mental Deficiency:

Individual with this diagnosis are capable of social and vocational adequacy for minimal self-support with proper education and training. Individuals with mild mental deficiencies frequently need guidance when under serious social or economic stress. They can learn academic skills to approximately the 6th grade by late teens. These individuals cannot learn general high-school subjects and need special education. With appropriate supports, these individuals can live successfully in the community, either independently or in supervised settings.

2. Moderate Mental Deficiency:

Individuals with this diagnosis are capable of self-maintenance in unskilled or semi-skilled occupations. They need supervision and guidance when under mild social or economic stress. These individuals can learn functional academic skills to approximately the 4th grade level if given special education. With moderate supervision, these individuals can attend to their personal care. They adapt well to life in the community, usually unsupervised settings.

3. Severe Mental Deficiency:

Individuals with this diagnosis can contribute partially to self-support under complete supervision and can develop self-protection skills to a minimal useful level in a controlled environment. Individuals with severe mental deficiency may learn to talk and communicate, can be trained in elementary health habits, but cannot learn functional academic skills. Most adapt well to life in the community, in group homes or with their families, unless they have an associated handicap that requires specialized nursing or other care.

4. Profound Mental Deficiency:

Individuals with this diagnosis have some motor and speech development, are totally incapable of self-maintenance, and need complete care and supervision. These individuals have some motor development but cannot profit from training in self-help; they need total care. Some can perform simple tasks in closely supervised and sheltered settings.

If your sibling has been given a medical/psychological/educational diagnosis, please specify.

---

If you have any medical/psychological/educational difficulties, please specify.

---

Where does your sibling reside?

---

### Appendix A: Qualitative Information

Please answer the following questions related to the materials you have just completed.

1. How applicable was this questionnaire to the relationship you have with your sibling?
2. Were there any items or content areas that were not applicable? If so, which ones?
3. Were there any aspects of your relationship with your sibling that were not covered in this questionnaire? If so, please specify.
4. Do you perceive your relationship with your sibling as a friendship? Why or why not?
5. Throughout your childhood and adolescence, do you think your sibling had similar experiences as you in terms of socialization, friendships, and opportunities? Why or why not?



UNIVERSITY OF REGINA  
FACULTY OF GRADUATE STUDIES AND RESEARCH

MEMORANDUM

DATE: January 18, 1999

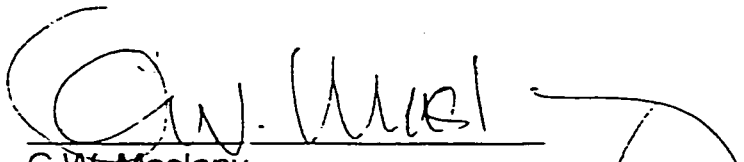
TO: L. Rossiter  
#25 - 34 Spence Street  
Regina, SK  
S4S 4H4

FROM: G.W. Maslany, Chair  
Research Ethics Review Committee

Re: **Siblings of Individuals with Mental Retardation: Psychological  
Functioning and Sibling Relationship**

Please be advised that the committee has considered this proposal and has agreed that it is:

- X   1. Acceptable as submitted.  
(Note: Only those applications designated in this way have ethical approval for the research on which they are based to proceed.)
2. Acceptable subject to the following changes and precautions (see attached):  
**Note:** These changes must be resubmitted to the Committee and deemed acceptable by it prior to the initiation of the research. Once the changes are regarded as acceptable a new approval form will be sent out indicating it is acceptable as submitted.  
**Please address the concerns raised by the reviewer(s) by means of a supplementary memo.**
3. Unacceptable to the Committee as submitted. Please contact the Chair for advise on whether or how the project proposal might be revised to become acceptable (4775.)

  
G.W. Maslany

cc: D. Sharpe, J. Roy, supervisors

### Appendix C: Recruitment Notice

Volunteers of any age or gender are needed to participate in a study concerning sibling relationships when one of the siblings has special needs. The purpose of the study is to learn more about the relationship and the impact, predictors, and possible outcomes of this relationship.

Although the term special needs incorporates a wide variety of disabilities, this study is focusing on any disability that has resulted in mental retardation. The disability must be a chronic, life-long disability; individuals with siblings who have acquired disabilities are not suitable for this study.

The total time necessary to complete a questionnaire will be approximately one hour. You will be permitted to complete the questionnaire on your own time. If you are interested please call Lucille at 584-3817. Thank you!



# Memorial

University of Newfoundland

Department of Psychology

February 8, 1999

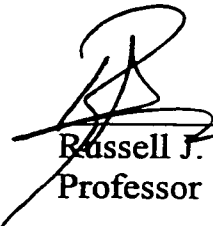
TO: Lucille Rossiter

FROM: R. Adams, Chairperson  
Faculty of Science Ethics Committee

SUBJECT: Research Proposal

---

The Ethics Committee of the Faculty of Science has reviewed your research proposal titled: "Siblings of individuals with mental retardation: Psychological functioning and sibling relationships." It is our view that the procedures you describe meet the requirements for ethically acceptable research with human subjects. The approved application forms are enclosed. A copy of those forms should be presented if and when you apply for authorization to pay subjects.



---

Russell J. Adams  
Professor

RJA:bmn

Encl.

cc: Dr. J. Evans  
Head  
Department of Psychology

## Siblings of Individuals with Mental Retardation: Psychological Functioning and Sibling Relationships

**Purpose:** The purpose of the study is to learn more about the quality of sibling relationships and determine the possible impact, predictors, and outcomes of this relationship.

**Explanation of Procedures:** You will be asked to complete a questionnaire regarding your sibling relationship, and personal and familial functioning. This will take approximately one hour.

**Potential Risks and Discomforts:** This research poses no foreseeable risk. However, if you feel uncomfortable at any time while completing the questionnaire, you may discontinue participation without penalty.

**Potential Benefits:** There are no direct benefits to you other than the knowledge that you may acquire about the research process.

**Confidentiality of the Data:** No identifying information (e.g., your name and/or student number) will be attached to the questionnaire. Your responses are anonymous. Your consent form will be separated from and stored separately from the data.

**Withdrawal from the Study:** Participation in this study is voluntary. If you decide to participate, you are free to withdraw and discontinue participation at any time.

**Offer to Answer Questions:** Please feel free to ask the experimenter if you have any questions. If you wish to learn the general findings from this study, you may contact the investigator, Lucille Rossiter, in the Department of Psychology, University of Regina. This project was approved by the Research Ethics Committee, University of Regina. If research participants have any questions or concerns about their rights or treatment as participants, they may contact the Chair of the Research committee at 585-4775.

**You are making a voluntary decision to participate in this study. Your signature below indicates that you have decided to participate having read and received a copy of the information provided above.**

Participant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher: Lucille Rossiter  
 Psychology Department  
 University of Regina  
 Regina, SK  
 S4S 0A2  
 (306) 585-4157