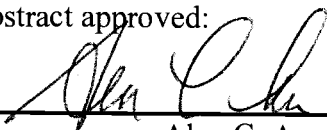


AN ABSTRACT OF THE DISSERTATION OF

Jana L. Meinhold for the degree of Doctor of Philosophy in Human Development and Family Studies presented on November 29, 2005.

Title: The Influence of Life Transition Statuses on Sibling Intimacy and Contact in Early Adulthood.

Abstract approved:



Alan C. Acock



Alexis J. Walker

The current project investigated the influence of three life transitions on the intimacy and contact siblings share in early adulthood. Using a web-based survey, 260 young adults from two large state universities and community members from the Portland, Oregon area were surveyed about their relationships with a single biological sibling. Participants were asked a series of questions concerning three life transitions (transition out of the parental home, transition to marriage or intimate partnership, and the transition to parenthood), contact (e-mail, phone, and personal), and sibling intimacy. Participants were also asked open-ended questions based on their responses to quantitative questions. A series of hierarchical linear regressions identified that sister-sister pairs were associated with the greatest levels of e-mail, phone, and personal contact, followed by the sister-brother, brother-sister, and brother-brother pairs. The gender of sibling pairs was not found to have an influence on the intimacy siblings shared. Coresidential status showed little to no influence on the intimacy and e-mail contact siblings shared, indicating that intimacy and e-mail contact did not appear to be influenced by the transition away from home for siblings. The phone and personal contact was however, significant with the transition away from home. The intimate relationship status of sibling pairs had little to no influence on the intimacy and phone contact shared by siblings. As predicted, those pairs in which both the participant and the sibling were single showed the greatest e-mail

and personal contact. When looking at the transition to parenthood, e-mail contact was not influenced by the transition to parenthood, but childless sibling pairs identified the greatest levels of sibling intimacy and personal contact compared to all other pairs. Phone contact was the lowest for sibling pairs in which both the siblings were parents. Open-ended data offered a different explanation of the intimacy and contact between siblings. Feedback from participants indicated that intimacy was something that possibly remained consistent across gender and life transitions, even with a drop in personal, phone, and e-mail contact. Implications and future directions were also explored

The Influence of Life Transition Statuses on Sibling Intimacy and Contact in Early
Adulthood

by

Jana L. Meinhold

A DISSERTATION

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Doctor of Philosophy

Presented November 29, 2005

Commencement June 2006

Doctor of Philosophy dissertation of Jana L. Meinhold presented on November 29, 2005

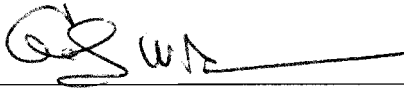
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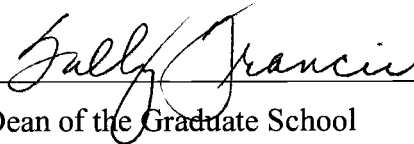
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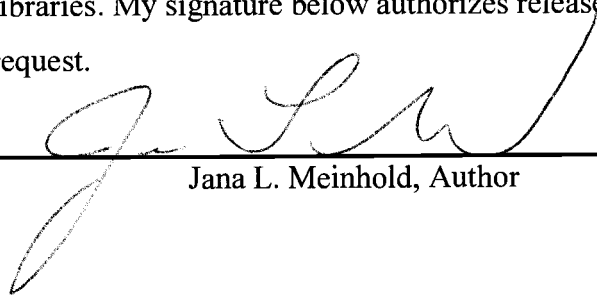


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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.



Jana L. Meinhold, Author

ACKNOWLEDGEMENTS

First and foremost, I thank my co-major advisors, Dr. Alexis Walker and Dr. Alan Acock. You have offered endless time and support to this project and I greatly appreciate all that you have done to help me complete. It was an honor working with two professors that embrace and love what they do; your passion for the field is contagious. I only hope that I will some day accomplish half the things you have accomplished in your academic careers. Thank you to Dr. Becky Warner, Dr. Patti Lou Watkins, Dr. Sam Vuchinich, and Dr. Mark Edwards, my committee members, for their support and helpful feedback throughout preparation and completion of my dissertation.

To the department of Human Development and Family Sciences, thank you for offering me structure to learn more about myself and the field while navigating the world of academia. To Dr. Mary Arnold, I thank you for offering me the opportunity to develop my research skills, many of which contributed directly to this project. I would like to thank the professors at both Oregon State University and Portland State University who allowed me into their classrooms for data collection, Dr. Lizbeth Gray, Dr. Megan McClelland, Dr. Kathy Greaves, Dr. Michael Taylor, Dr. Ben Anderson-Nathe, and Dr. Vivian Amantana. Thanks to Debra Finegan, owner of Classic Reunions. I appreciate your investment in my project and the ability to utilize your much needed contacts in the Portland area. To the reunion organizers who graciously allowed me access to their classmates via e-mail, thank you. To all the individuals who participated in this project, thank you for giving me the opportunity to learn more about your sibling relationships.

Special thanks to Cheryl Peters, my friend and fellow graduate student, your consistent nudges and support along the way helped me to stay on track. Thank you to Sandy Frye for always having a smile on your face and allowing me to tap your endless knowledge of the system. Again, I thank Ben Anderson-Nathe for talking me through my frustrations and offering expertise when I needed it most. Thank you to Lynne Paasch, Rick and

Cathy Meinhold, and Marcus Meinhold for all the years of support and encouragement. To my parents, Dan and Carolyn Pursley, my seven brothers and sisters, their spouses, and children, you enrich my life and provide me the opportunity to see the world from many different perspectives. Finally, to Travis Meinhold, thank you for putting your own career goals on hold to support and nurture mine. You really are the best Hunk ever.

This projects success would not have been possible without the participation and much appreciated contributions of all those above. Thanks to all.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
REVIEW OF LITERATURE	3
Theoretical Perspective	3
The Life Course Perspective	3
The Life Course Perspective and Sibling Relationships	8
Empirical Literature	14
Gender and the Sibling Relationship	14
Moving Away from Home and the Sibling Relationship	17
Marriage and the Sibling Relationship	18
Parenthood and the Sibling Relationship	20
Purpose of Study and Hypotheses	22
Hypothesis One-Gender Composition	22
Hypothesis Two-Co-resident Status	23
Hypothesis Three-Intimate Relationship Status	24
Hypothesis Four-Parental Status	24
METHOD	25
Participants	25
Measures	27
Dependent Variables	28
Independent Variables	30

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Control and Background Variables.....	34
Qualitative Questions	38
Web Survey	39
Procedure	40
Overview.....	40
RESULTS	47
Pilot Data Analysis	47
Primary Data Analysis	48
Sibling Intimacy.....	54
Sibling Phone Contact.....	60
Sibling E-Mail Contact	65
Sibling Personal Contact.....	71
Open-Ended Responses	77
DISCUSSION AND CONCLUSION.....	83
Gender Composition of Sibling Pairs	83
Coresidential Status of Sibling Pairs.....	85
Intimate Relationship Status of Sibling Pairs	89
Parental Status of Sibling Pairs.....	92
Control Variables	95
Strengths and Limitations	96

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Implications.....	99
Conclusion	100
REFERENCES	102

LIST OF TABLES

<u>Table</u>	<u>Page</u>
3.1 Descriptive Statistics on all Demographic, Dependent, Independent, and Control Variables of Interest ($N = 260$)	45
4.1 Correlations for Outcome, Control, and Predictor Variables ($N = 260$)	50
4.2 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Intimacy ($N = 260$)	55
4.3 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Phone Contact ($N = 260$)	61
4.4 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling E-mail Contact ($N = 260$)	66
4.5 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Personal Contact ($N = 260$)	72
4.6 Open-Ended Questions Presented by Four Response Themes: Positive, Neutral, Negative, and Mixed	78

LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
APPENDICES	108
A Phone Script for Initial Contact with Reunion Organizers	109
B Project Information Packet.....	110
C Form E-mail for Organizers to Send Before URL E-mail	113
D Form E-mail to Participants with URL for Survey	114
E Participant Reminder E-mail	115
F Script for Initial Phone or E-mail Contact with Instructors.....	116
G First Informational E-mail for Instructors to Send to Students.....	117
H Form E-mail to Students with URL for Survey	118
I Participant Reminder and Final E-mail	119
J Informed Consent Documents.....	120
K The Sibling Relationship in Early Adulthood Survey – Version One	125
L The Sibling Relationship in Early Adulthood Survey – Version Two	131
M The Intimacy Scale (Walker & Thompson, 1983)	137
N Initial Interaction with Students in HDFS Class.....	138
O Questions about Web Survey for HDFS Students	139

DEDICATION

This dissertation is dedicated first and foremost, to my seven siblings, Leah A. Sakach, James L. Pursley, Joe R. Pursley, Sara A. Crowley, Dana M. Condrey, Laura F. Pursley, and Christina R. Pursley. As our names change and we create families of our own there is one thing that remains, we are all Pursley's and nothing can disrupt the common thread we share.

To my parents, Dan and Carolyn Pursley; I have spent the last 11 years learning about families from research and books, but the foundation from which I learn comes from you. Thank you for the opportunity to grow and develop with seven wonderful and unique siblings.

Finally, to my husband, Travis V. Meinhold; as we transition into the next phase of our lives I only hope I can offer you with the same depth of love and support you have offered me during my education.

The Influence of Life Transition Statuses on Sibling Intimacy and Contact in Early

Adulthood

CHAPTER ONE

INTRODUCTION

The sibling relationship stands the test of time. Compared to relationships with friends and other family members, the sibling relationship is potentially the longest lasting relationship in an individual's lifetime. Most Americans grow up in a family with siblings; those siblings then make the transition into adulthood together (Lee, Mancini, & Maxwell, 1990). Whereas, sibling relationships usually endure across the lifespan, the significance of the relationship changes as siblings age and experience life. As children, our siblings may be our closest companions, but as we grow, the sibling relationship can take on different levels of interaction and intimacy with the addition of new relationships such as friends, partners, children, and the demands of aging parents (Cicirelli, 1985; Gold, 1996; Lamb, 1982; Ross & Milgram, 1982).

There is a lack of coherence in previous research on the sibling relationship, in part because of the belief that other family relationships play a more intrinsic role in an individual's development. Relationships with parents and peers are seen to have a greater influence than an individual's interactions with siblings. Recently, researchers have begun to recognize how influential and significant the relationship between siblings can be (Connidis, 2001; Weaver, Coleman, & Ganong, 2003).

The bulk of past research on siblings focuses on three developmental stages: childhood, adolescence, and older adulthood. Research addressing the sibling relationship in childhood and adolescence focuses on gender, rivalries, birth order, and number of

siblings' influence on closeness (Buhrmester & Furman, 1990; Cicirelli, 1985), whereas older adult researchers keep a focus on the development of stronger sibling ties through contact, closeness, gender differences, and exchanges of aid (Bedford, 1989a, 1995; Connidis, 1989a, 2001; Goetting, 1986; Gold, 1989b). Although researchers are beginning to understand the array of sibling influences across the lifespan, a lack of understanding remains in early adulthood. Researchers have paid little attention to how life transitions such as having a child and getting married, influence the sibling relationship during the young adult and middle years. If we examine how life transitions influence the sibling relationship, we may learn how a relationship with the potential for life long association can be rivalrous, ambivalent, supportive, and deeply connected at the same time.

The life course perspective proposes that individuals and families are influenced by their status in society and by the meanings assigned to that status. An individual's age also influences how life transitions are experienced. For this project, I utilize the sibling literature and the life course perspective's view on life transitions to answer a single research question: How do gender and three life transitions influence the intimacy and contact siblings share in early adulthood?

CHAPTER TWO

REVIEW OF LITERATURE

The literature reviewed in this chapter examines the sibling relationship from the perspective of gender and three life transitions common in early adulthood. Because of limited literature on early adult siblings, I rely on the older adulthood literature to inform this project. The life course perspective also is examined to lend insight to the influence of life transitions on sibling intimacy and contact. The life course perspective identifies the aspects of time and social location that influence the sibling relationship over time. Relevant literature on adolescent sibling relationships in relation to life transitions also is addressed.

Theoretical Perspective

The Life Course Perspective

The life course perspective addresses individual and family development from a dynamic, contextual, and processual view (Bengtson & Allen, 1993). Dynamically, the life course perspective identifies patterns of historical change, development, and growth of individuals and families and their interaction with the outside world. Contextually, this perspective identifies the importance of circumstances that embody a specific situation or event. Finally, the life course perspective's idea of process is the continuous series of actions and changes that lead families and individuals toward chosen or unchosen goals and ideals. Changes that occur in both families and individuals over time and the idea that families are entities of social change, are the foundations of the life course perspective.

The life course perspective identifies four major assumptions: the assumption that people have different life stages related to age, historical time, and generational position

(multiple time clocks); the assumption that social context and family interaction play important parts in development (social ecology); the assumption that assigned meanings are the norm (diachronic analysis); and the assumption that it is important to analyze differences across gender, race, ethnicity, and SES (heterogeneity and diversity), each contributing three concepts to the understanding of individuals and families over time. In the following sections, I address the assumptions and concepts that are both central and relevant to this project.

Changes Over Time

Multiple Time Clocks.

The life course perspective's assumption of multiple time clocks focuses on three concepts: aging (ontogenetic time), family status (generational time), and historical time and events. All three concepts identify different aspects of individual and family change.

Aging refers to the developmental changes that individuals experience from the time they are born until death. More clearly stated, aging time refers to an individual's age in chronological years. Behavior and life events are determined by age, not only for the individuals in a family, but also for families as a whole. The interactions that occur within families are determined by the age-related behaviors of different family members. An older brother of 16 may be responsible for a younger brother of 10 when adults are away from home. The age of 16 helps parents to determine the appropriateness and responsibility that goes along with that developmental period.

Family status refers to the status an individual has based in family ranking (child, parent, grandparent) and the roles and expectations that come with a specific status.

Because I examined the relationship between individuals in the same generation, generational time was not applied to this project.

Historical time, unlike age and family status, reflects the larger worldview of time, on a macrosocial level. It focuses on the periods and events that identify or label an era or given length of time. Historical time can only be surveyed and studied in a retrospective analysis. The historical events and periods influence developing individuals and families in different ways. Examples of historical events that have profoundly influenced families and individuals are the 9-11 tragedy, the Vietnam era, and the Great Depression.

All three concepts of time addressed by Bengtson and Allen (1993) identify different forms of change. Some changes come with physical development, whereas others are created by historical events that are not always apparent until seen from a retrospective point of view. The multiple time clocks assumption allows researchers to interpret the many changes experienced by individuals and families over time.

Cohort Effects.

The life course perspective proposes the importance of cohort analysis, or the interactions between age and historical effects. Age refers to the developmental factors that come into play during individual and family development. Historical refers to time and the influence of past events. Cohort effects are the interactions of both age and period effects on an individual's development.

The age at which an individual experiences an historical event can greatly influence the overall experience of that event. Glen Elder (1974) examined the longitudinal effects of the Great Depression on young men and women from two birth

cohorts in the 1920s and 1930s. In his work, Elder demonstrated a distinct difference in life consequences for the two birth cohorts, especially in work and educational pursuits. Those who were old enough to enter World War II were able to secure educational advancement through the GI Bill, whereas those who were too young for the war stayed home and sought work to help their families rather than an education. Addressing birth cohorts, as Elder did, allows researchers to focus on the unique life experiences between and within different groups of individuals.

Social Ecology

The life course perspective proposes not only the importance of individual and family interactions, but also the importance of social context. The social ecology assumption addresses social context through the influence of social structure and the creation of meanings using four concepts: social structural location, social meanings, cultural contexts, and the interplay of macro-micro levels of analysis (Bengtson & Allen, 1993). In this project, social structural location and the social construction of meaning have the greatest relevancy.

Social Structural Location.

The social structural location refers to where families are located in the broader social structure and how that location influences the events families experience with time. Family members may find their social location or class determined by their income: The greater the income, the more resources and activities available to family members. Families with lower incomes are at lower social locations with fewer resources compared to wealthier families. Individual family members are directly influenced by sociostructural factors such as income, education, gender, and race/ethnicity.

Not only does structural location matter to experiences over time, it helps to determine the normative expectations and aspirations individuals in families place on their kin. Further, the differences across social level can greatly influence the appropriate timing of family events. Family transitions such as college graduation, marriage, childbirth, retirement, and divorce are examples of events that can be linked to social structural location. A woman who marries soon after college graduation may be pressured by her family to have a child because of her family's established sequence of appropriate life events. A second woman may be expected by her family to seek employment and to establish a career. In both cases, the women are influenced by their social location and their family's interpretation of on-time normative life events.

Social Meaning.

Meanings are assigned to the events and behaviors individuals experience. The social meanings concept presented by the social ecology assumption proposes that social meanings are assigned to life events with the passage of time for all individuals and families. More specifically, it deals with the norms we assign to life events on the basis of our social ranking or location. The meanings we assign are our norms. With the meanings we assign socially, life events become social institutions that carry with them normative ideals about how to live. These social institutions may tell us to marry in our early 20s, to seek a trade rather than a college education, or to travel the country before settling down and having a family.

As time passes social meanings change. Generational roles and expectations differ across social classes. As members of one generation increase their social standing, they may be faced with new social expectations and sequencing of on-time life events. Older

populations may struggle with the newly assigned social meanings of younger individuals and families, and may find their own meanings difficult to maintain. Older parents may find their adult children's parenting practices less than acceptable, whereas adult children may feel their parents are old fashioned.

Social structural context and the social construction of meaning are two concepts that help to interpret the changes that occur within families and individuals over time. Each one provides a link to understanding the influence of social pressures, expectations, and normative events individuals and families place on their own kin and on those within their social location.

Structural Diversity

The structural diversity concept addressed by the heterogeneity and diversity among families assumption identifies diversity as an important aspect of family change over time. As discussed in the social structural context and social meaning concepts, every individual and family can vary in experiences on the basis of their social level. The structural diversity concept identifies the importance of analyzing differences across families by gender, race, ethnicity, and socioeconomic status. Interpreting structural diversity within families can only add to the rich understanding of experiences and events that occur in families with the passage of time.

The Life Course Perspective and Sibling Relationships

Utilizing the ideas proposed by the life course perspective, I identify the links between sibling intimacy and contact in early adulthood life transitions. I begin by addressing aspects of time that relate to the development of intimacy between siblings, followed by the importance of cohort. I address the life course perspective's approach to

understanding how life transitions influence sibling intimacy and contact using concepts of social structural context, social construction of meaning, and structural diversity.

Time and the Sibling Relationship

I address two concepts of time as they relate to sibling relationships in early adulthood: individual time and historical time.

Siblings and Multiple Time Clocks.

The sibling relationship is a unique family relationship. Individuals may be anywhere from the same age to more than 15 years older than their siblings. With the potential for such a diverse range in age, it can be difficult to identify the intimacy that sisters and brothers share over time. The life course perspective's assumption of multiple time clocks helps to explain the intimacy siblings feel over time. Identifying the many changes individuals and their siblings go through because of similar age and historical events allows me to construct a picture of what a sibling relationship may look like in early adulthood. Many researchers indicate that the closeness siblings share over time increases with age (Cicirelli, 1982; Gold, 1989a; Seltzer, 1989), whereas other researchers support the idea that the sibling relationship oscillates in closeness (Bedford, 1989a).

The multiple time clocks assumption proposes that the ties siblings have with one another are continually evolving. Life experiences and the meanings we derive from those experiences, whether they be personal, social, or historical, make us who we are. As time goes by, we experience new things because of our age, our position in our family, our culture, and our world. Every new experience makes us see life in a new or

different way, affecting the way we live and the decisions we make (Bengtson & Allen, 1993).

Early adulthood is typically marked by the age span of 18 through 35. In modern society, age 18 is seen as a marker for adulthood, a time to set off on your own to establish yourself or to attend college. Early adulthood is also a period that carries with it other life and generational events such as parenthood, marriage, career attainment, and a higher level of responsibility. Because so much change and experience occurs during early adulthood, it is important to examine the influence these changes have on the sibling relationship. If both siblings are experiencing similar challenges or successes, how will that influence the intimacy and contact they share? Will the increasing responsibilities of family and work make it difficult to connect and to maintain a sibling relationship?

Cohort Analysis.

Cohort analysis allows me to identify the common experiences individuals in a particular group share over time. In phase two of this project, a single birth cohort was sampled. The target age period for this project is early adulthood, a period that spans 18 years. By studying individuals planning their 5th- and 10th- class reunions, and students from two state universities in Oregon, I had access to a range of individuals between the ages of 18 and 35. Further, I had access to a broad array of life transitions and experiences.

The two class reunion cohorts, individuals aged 27 to 28 and 28 to 29 have had many years past college or high school to experience their life path. Members of this group may have recently entered into long-term partnerships or marriage and possibly

become parents. Those sampled in phase 3 ranged in age from 18 – 40, the group potentially having the greatest number of life transitions. Sampling individuals from a single cohort and across early adulthood has allowed me to identify an array of life transitions.

Not all individuals fall within the specified birth cohorts, but all individuals have experienced similar historical events as they moved from high school into early adulthood. A few of the more major historical events include the 911 tragedy, the Clinton/Lewinsky scandal, Desert Storm, and the start of the new millennium. Historical events play an important role in life consequences, especially in relation to the age at which the historical event was experienced (Elder, 1974).

The multiple time clocks assumption supports the idea that the relationship siblings share over time will evolve in its own way, because of the many experiences and changes associated with individual development and historical events. The life course perspective allows me to explore microlevel (individual development) factors at the same time as macrolevel (cultural and historical) factors, both influencing the intimacy and contact siblings experience in early adulthood.

Life Transitions and the Sibling Relationship

I apply the social ecology and heterogeneity concepts presented above as they relate to the influence of life transitions on the sibling relationship in early adulthood. The social ecology assumption expresses the importance of families in the larger social structure and in the social creation of meanings. The concept of structural diversity proposes the importance of race/ethnicity, SES, and gender on the structure and behaviors

family members portray with time. All three concepts work together to identify the experiences that ultimately influence the intimacy and contact in the sibling relationship.

An individual's race/ethnicity, gender, and SES can influence when and how transitions occur. Some racial groups may choose to wed or have children at a younger age, whereas others postpone childbirth. A young African American man from a poor family may be encouraged to seek employment rather than a college education after high school. A Latina may be encouraged to be a homemaker rather than to seek outside employment because of her family's traditional ideas about gender. Race and ethnicity, gender, and SES play an important part in the order and timing of life transitions; in many cases the three cannot be separated.

Where a family sits in the social structure can greatly influence the events family members experience with the passage of time. In this project, life transitions such as the transition out of the parental home, marriage or long-term intimate partnerships, and the transition to parenthood were addressed. When studying life transitions in early adulthood, it is important to identify an individual's social location. Individuals are influenced by their families' social location; that is, factors such as race, gender, and SES, especially through their family's beliefs and interpretation of when and how life events should occur.

One woman may find that she is expected to seek employment after high school whereas another heads off to college to please her parents. The choices individuals make about when and how to seek changes in their generational status will be greatly influenced by the social location of their family. Siblings may find they are subject to similar expectations, especially those who are close in age. Siblings who differ in gender

may find family expectations linked to social location. Women, but not men, may be expected to marry at a younger age and to have children rather than to seek a formal education. Gender expectations combined with other social factors can influence the relationship siblings build over time.

Life events and transitions carry with them social meanings. Whether the events in one's life are viewed as normative or on-time, depends on the meanings the social institution and individual assign. The relationship individuals have with their siblings will be influenced by the social expectations and social meanings assigned to life transitions and events, at both a family and the societal level. A college education may have little meaning to a family of trade workers, and those ideals can greatly influence the individual choices of family members. A brother who watches his older sibling graduate from college will assign meaning to that event. That meaning may motivate him to earn a college degree, especially when remembering his parents' joy in having the first college graduate in family history.

The social location of families gives meaning to the life transitions and events family members choose. The life course perspective tells us that siblings will be influenced by the meanings assigned to life transitions, especially if those life transitions are considered on or off-time. The social structural location, the social creation of meaning, and the structural diversity of families and individuals will further inform the influence of life transitions on sibling intimacy and contact in early adulthood.

Empirical Literature

The sibling relationships individuals forge over time can manifest different levels of intimacy and contact on the basis of developmental stages and life experience. The two

main bodies of sibling literature, both in adolescence and later adulthood, allow for a unique look at possible differences over time. Both bodies of literature show the importance of the sibling relationship and the potential for lifelong friendship and support, while identifying the unique qualities that arise in the separate developmental periods.

The adolescent literature focuses more on the rivalrous relationships that erupt between siblings because of shared living space and cries for parental attention (Newman, 1994; Raffaelli, 1992; Updegraff, McHale, & Crouter, 2002). In the adult literature, researchers focus more attention on contact and exchanges of aid that occur between siblings. In both the adolescent and older adult literature, a number of concepts have been identified as playing an intrinsic role in the nature of the sibling relationship. These concepts include sibling's marital status, parent's marital status, gender, sibling's parental status, birth order, and number of siblings (Cicirelli, 1982; Connidis, 2001; Connidis & Campbell, 1995; Daniels, Dunn, Furstenberg, & Plomin, 1985; Lee et al., 1990; White, 2001).

Gender and the Sibling Relationship

Consistent with the life course perspective, this study recognizes that gender plays an important part in the everyday lives of individuals and families. When it comes to the sibling relationship, gender has been shown to influence interaction, support, contact, and intimacy among siblings. The relationship is typically studied as gendered pairs or dyads, such as brother-brother pairs or sister-brother pairs.

A handful of researchers have shown support for the unique ties sisters forge in both adolescence and adulthood (Buhrmester, 1992; Buist, Dekovic, Meeus, & van Aken,

2002; Connidis, 1989b; Connidis & Campbell, 1995; Lee et al., 1990). Sisters exhibit the highest levels of interaction compared to other pairs. The stronger ties between sisters have been attributed to deeper communication and sharing by some (Connidis, 1989b), and to socialization regarding nurturing women receive from others (Cicirelli, 1977; Gold, 1989b; Pulakos, 1989).

Sisters who discuss life concerns, family issues, and relationship woes with each other will show high levels of intimacy and connection (Cicirelli, 1977; Gold, 1989b; Pulakos, 1987, 1989). This depth of communication is believed to be linked to the closeness and confiding sister's share. Researchers have also explained the high levels of sister-sister intimacy by way of the "femininity" in the relationship. Increasing the number of women in a dyad in turn increases the intimacy of the relationship (Bedford, 1996; Gold, 1989a; Suggs, 1989). The same cannot be said for the brother-brother relationship.

Not all studies agree that femaleness influences the intimacy between siblings (Avioli, 1989; Cicirelli, 1982; Connidis, 1989a). Connidis (1989a) found gender composition to have little influence on the identification of siblings as friends or confidants. Cicirelli (1982) attributed differences across gendered pairs to the developmental period of the siblings. He proposed that gender dyad composition is less relevant as siblings age, indicating that ties are stronger overall in older adulthood. As research continues to address the sibling relationship across the lifespan, it becomes clear that the developmental gender argument unfairly downplays the ties siblings share in periods other than late adulthood.

Another argument as to why gender differences are seen across pairs is the idea of gender likeness. A handful of researchers argue that siblings of the same gender maintain closer relations because of gender “likeness” (Bedford, 1996; Gold, 1989a). When spending time together, women engage in conversations about relationships, caring roles, and life concerns, whereas men tend to show less communication in interactions but greater amounts of activity. The gender likeness argument proposes a weaker relationship for brother-brother pairs.

Sarah Mathews (1994) has brought increased attention to the brother-brother relationship, identifying the importance of studying male interaction through qualitative analysis (Mathews, Delaney, & Adamek, 1989). Other researchers have shown same-gender relationships, especially the sister-sister tie, to be more volatile and stressful compared to opposite-gender dyads (Bank & Kahn, 1982; Bedford, 1995; Cicirelli, 1982; Downing, 1988).

Previous research has demonstrated the sister-sister tie to be the most influential of all sibling pairs (Connidis, 1989b; Connidis & Campbell, 1995; Weaver, Coleman, & Ganong, 2003; White & Riedmann, 1992). Researchers such as Ingrid Connidis (1989a, 1989b, 1992, 2001) and Victoria Bedford (1989a, 1989b, 1995, 1996) have explored the effects of gender, distance from sibling, contact, closeness, support, and family status (marital status, number of children) on the sibling relationship in older adulthood. Both have shown the sister-sister dyad to have the greatest contact and intimacy, followed by the sister-brother pair. Brother-brother pairs have consistently been shown to interact the least, possibly because women have greater emotional investment and feelings of obligation in their relationships compared to men (Burholt & Wenger, 1998; Connidis &

Campbell, 1995). Other researchers support the idea that women are more likely than men to play the role of confidant and friend, greatly influencing the interaction and support in a relationship (Campbell, Connidis, & Davies, 1999; Connidis, 2001; Connidis & Campbell, 1995; White & Riedmann, 1992).

The majority of research has reported the sister-sister relationship to have the greatest contact and support, whereas the brother-brother relationship has received limited attention. For this reason, little is known about the brother-brother relationship, leaving many unanswered questions. Further, inconsistencies exist across research on sister-sister ties, indicating that whereas sisters are close and supportive in adulthood they may be more rivalrous during adolescence and early adulthood. It seems that further investigation of the intimacy and contact of siblings in early adulthood across all four gender-pairs (sister-sister, brother-sister, sister-brother, and brother-brother) is warranted.

Moving Away From Home and the Sibling Relationship

A major transition that occurs for young adults is the transition out of their parent's home. The move can take place for many reasons such as a need for increased autonomy or the temporary move to attend college. For individuals, this movement represents an increase in adult status and allows for a different type of interaction with family members. The move may enhance the sibling relationship, especially if siblings are close in age and experiencing similar life events (Meinhold, 2003; Newman, 1991; Weaver, Coleman, & Ganong, 2003). The transition also may reduce the interaction between siblings if the sibling moves far away or has less contact with sibs. This project investigated the influence of this transition on intimacy and contact between siblings in early adulthood.

Marriage and the Sibling Relationship

The transition into marriage, cohabitation, or an intimate partnership influences other relationships. The rapid increase in cohabitation in the past 15 years has forced researchers to address the differences between married and cohabiting couples. In a 2000 review of cohabiting research, Smock proposed that the cohabiting couples of today are the married couples of tomorrow. For many in the United States, cohabitation is seen as a part of the marriage process rather than an alternative to marriage (Brown & Booth, 1996). For this reason, intimate partnerships including both cohabitating couples in same-sex partnerships and heterosexual relationships were combined into the married category for this project.

With marriage and cohabitation, couples initiate new patterns and habits as they develop their space together. Sometimes these new patterns can take away from time spent with parents, grandparents, and most definitely time spent with siblings. The dominant school of thought is that marriage and cohabitation has a negative influence on some aspects of the sibling relationship (Campbell et al., 1999; Cicirelli, 1985; Connidis, 1989a; Connidis & Campbell, 1995; Gold, 1996; Pulakos, 2001; Ross & Milgram, 1982; White, 2001), although others argue that intimate partnerships strengthen ties with siblings (Connidis, 1992; Ross, 1981; Ross & Milgram, 1982). These discrepancies may have resulted in part from the data collection method.

Although there is a reduction in contact, there is not necessarily a reduction in closeness or intimacy. White (2001) demonstrated modest support for the loss of sibling contact after marriage. These findings are supported by Connidis (1989) who showed in-person contact to be the most frequent between single siblings. In many cases siblings

who reported fewer competing relationships tended to maintain the greatest level of contact with each other (Burholt & Wenger, 1998; Campbell et al., 1999; Connidis, 1992; Connidis & Campbell, 1995).

Although contact has been shown to decrease with the transition to marriage, some siblings report an overall improvement in their relationship with marriage. In a retrospective study, one third of participants reported improved ties with their sibling with their own marriage (Ross & Milgram, 1982). In Connidis's (1994) qualitative analysis of adult sibling relationships, participants reported marriage as having an enhancing effect. The enhancement was attributed to both their own marriage and to the marriage of their brother or sister. The closeness and improved relations reported after marriage may reflect the influence of gender on the sibling relationship. Women were more likely than men to report an enhanced relationship after marriage (Ross & Milgram, 1982). Other factors that have been reported to reduce the frequency of sibling contact and closeness after marriage include the new spouse's fit with family, differing religious backgrounds, differing ethnicity, differing SES, and differing educational levels.

Marriage or intimate partnership formation often occurs in early adulthood. Previous research has indicated a reduction in sibling contact after marriage, in part because of the reorganization of activity patterns or an increase in relationship responsibilities. Other aspects of the sibling relationship such as closeness and intimacy have not yet been investigated as thoroughly as contact. In the current project, I investigated the influence of partner status on intimacy and contact among siblings in early adulthood. Cohabiting relationships, same-sex partnerships, and marital relationships may have similar influences on the sibling relationship.

Parenthood and the Sibling Relationship

The transition to parenthood, as with the transition to marriage, brings change to routines and personal responsibilities. The responsibility and attention that come with a new or young child greatly depletes the attention necessary to maintain other close relationships. Parental status has been shown to have a profound impact on the sibling relationship, both good and bad. Some studies maintain that strong ties between siblings can only be nurtured by those without children (Burholt & Wenger, 1998; Campbell et al., 1999; Connidis, 1989a, 1989b; White, 2001), whereas others demonstrate the sibling relationship flourishes with the addition of children and shared life experiences (Connidis, 1994; Gold, 1996).

Many researchers report a decline in closeness of the sibling relationship with the transition to parenthood. White (2001) discussed the detrimental effects of parental status on contact and exchange of aid for siblings. Childless siblings are perceived to have the greatest flexibility and time to contribute to their relationships. Connidis (1989b, 1999) reported childless siblings maintain the most active ties in adulthood. Not only did childless siblings report seeing each other more often, but they engaged in discussions of greater importance and depth.

When it comes to the support, contact, and closeness between siblings, a handful of researchers have demonstrated that parenthood enhances the relationship. In a qualitative interview of both men and women in adulthood, Gold (1996) identified an increase in closeness between sisters when both shared the transition to parenthood. By participating in similar life events, sisters' relationships developed deeper meaning and intimacy. Connidis and Campbell (1995) discovered similar levels of emotional closeness

between all types of sibling pairs. Emotional closeness was not associated with childlessness as in previous studies.

High levels of support and helping behavior are also demonstrated in relationships comprised of one childless and one parent sibling. When siblings who are parents are in need of time away from raising children, help with nieces and nephews from a childless sibling is supportive. The childless sibling, most often a woman, offers the greatest amount of support to her siblings, not always through intimate interactions, but because of increased opportunity and the underlying obligation she feels toward her siblings (Connidis & Campbell, 1995). Children, then, have the ability to bring families together. The current project investigated the transition to parenthood in early adulthood and its influence on sibling intimacy and contact.

Research on sibling relationships in the 1980s provided a basic level of knowledge about the sibling relationship in adolescence and older adulthood. Unfortunately, there are still gaps in the literature at many points across the lifespan, with a serious lack of understanding remaining in early adulthood. A small number of studies investigated sibling perceptions of closeness and communication and the sibling relationship in comparison to that of friends (Newman, 1991; Weaver, Coleman, & Ganong, 2003; Pulakos, 1989). A handful of studies have examined siblings across adulthood, with samples ranging from early adulthood to older adulthood (Lee et al., 1990; White, 2001; White & Reidmann, 1992). Although these studies are important, the wide age range makes it difficult to tease out early adult sibling interactions.

As already shown, research on sibling relationships has clarified that gender plays an important role in the closeness and intimacy siblings share. There is conflicting

evidence in the early adulthood literature concerning sibling interaction and emotional closeness. Some researchers propose the sibling relationship in early adulthood declines in involvement, when compared to friendships (Pulakos, 1989), whereas others report that siblings, especially sisters, have positive perceptions of closeness in their relationship (Newman, 199; Weaver et al., 2003). The current project addressed the influence of gender, marital status, parental status, and the transition out of the parental home on sibling ties in early adulthood.

Purpose of Study and Hypotheses

The purpose of this study was to examine sibling relationships in early adulthood, and to address whether life transitions influence intimacy and contact in those relationships. Grounded in the life course perspective and the empirical literature, gender as well as three cross-sectional life transitions were examined as potential influences: coresident status, intimate relationship status, and parental status. Family composition and background characteristics such as age difference, birth order, number of sisters and brothers, race/ethnicity, SES, and distance from sibling were controlled.

Based on the research and theoretical explanations provided above, the following hypotheses were produced.

Hypothesis One-Gender Composition

Sister-sister pairs were expected to show the greatest levels of intimacy and contact. Sister-brother (sister is reporting) and brother-sister (brother is reporting) pairs were expected to show slightly lower levels of email, phone, and personal contact, but high levels of intimacy. Brother-brother pairs were expected to have the lowest levels of

intimacy and contact. Because sister-sister pairs were predicted to have the greatest contact, they were used as the reference group for all analyses.

Hypothesis Two-Coresident Status

Pairs in which siblings coreside, either with parents or with one another, were expected to have the greatest levels of personal, e-mail, and phone contact and intimacy overall. Little is known about the contact and intimacy of early adult siblings who live apart. It was hypothesized that those living together would have high levels of contact and intimacy because of the increased level of interaction associated with coresidence, whereas contact and intimacy between siblings who live apart was difficult to predict. Pairs in which both siblings live outside their parents' home but who do not coreside were expected to have high levels of intimacy as compared to coresiders, but lower levels of personal contact compared to coresiding sibling pairs. Even with a reduction in personal contact, e-mail and phone contact was expected to remain frequent for those living apart outside of their parent's home but not as frequent as that of siblings who coreside. Sibling pairs with mixed living arrangements such as participant on own-sibling with parent and participant with parent-sibling on own were expected to have the least amount of personal contact, but e-mail and phone contact were expected to remain frequent. Intimacy was expected to reduce for mixed pairs, but no less than for those living apart and outside of their parent's home. Because coresiding pairs were predicted to have the greatest contact and intimacy, they were used as the reference group for all analyses.

Hypothesis Three-Intimate Relationship Status

Intimacy and contact were expected to be the highest between pairs in which both siblings were unmarried. Sibling pairs with one unmarried sibling (married-unmarried and unmarried-married) were expected to have lower levels of contact compared to those in the unmarried-unmarried pair. Intimacy levels for mixed pairs were expected to be high, slightly lower than that of the unmarried pair. Pairs that included two married siblings were expected to experience the lowest levels of contact and intimacy. Because unmarried sibling pairs were predicted to have the greatest level of contact and intimacy, they were used as the reference group for all analyses.

Hypothesis Four-Parental Status

Childless siblings were expected to have greater levels of contact and higher intimacy than those with children. Pairs in which only one sibling had a child were expected to have relatively less contact but levels of intimacy similar to childless pairs. Pairs including two parents were expected to have the lowest levels of contact and intimacy. Because childless pairs were expected to have the highest levels of contact and intimacy, they were used as the reference group for all analyses.

CHAPTER THREE

METHOD

Participants

Participant data were gathered in three Phases over a six-month period.

Participants for Pilot Data Collection (Phase 1) were 49 Oregon State University Students in a single Human Development and Family Sciences course. Those students enrolled in HDFS 360 Family Development during the spring of 2004 were asked to participate.

Participants for Phase 2 of data collection included two cohorts in early adulthood who have at least one living sibling and who had graduated from high schools in the Portland area during the years 1993 – 1994 ($n = 23$) and 1994 – 1995 ($n = 20$). Forty-three community members from graduating classes planning for their 5th- and 10th- year class reunions in Portland, OR and its surrounding areas, participated in Phase 2 data collection. Fifty class reunion committees from high schools in the Portland area were contacted. Public rather than private schools were contacted to maximize diversity in the sample. All public high schools in the three counties surrounding Portland, OR were included on a master list from which a random sample of schools was initially drawn ($N = 60$). Once the random sample was exhausted, contact of remaining high school class reunion committees began.

Using the Internet and high school contact information, I sought out the reunion organizers for each of the schools contacted (Appendix A). Once phone or e-mail contact was established with class reunion organizers, they were informed about the project and asked to help recruit participants. Additional information about this project was sent via

e-mail attachment to all interested groups (Appendix B). Reunion organizers who agreed to participate were asked to forward a series of informative e-mails to their classmates.

All three e-mails were sent to a chosen reunion committee member and then sent as if they came from that individual. The first of three e-mails sent included a letter informing class members about participation in the project (Appendix C). The e-mail explained the forthcoming URL e-mail and the class's participation in this project. Once organizers sent the introductory e-mail to class members, a second e-mail was sent to organizers including project instructions and the URL for a web-based survey (Appendix D). After two weeks had passed, a third and final e-mail was sent, reminding participants to complete the web survey (Appendix E).

It was determined that once 300 participants had completed the web-based survey, contact of reunion committees and potential participants would cease. In the event that a reunion committee declined participation, they were thanked and the committee from the next chosen high school was contacted. After contacting the first 20 high schools and reunion committees, a sample of 300 was not reached. I continued contacting schools until all schools in Portland and surrounding areas were exhausted. Once an exhaustive search was conducted, Phase 3 of data collection began. Because of the selection criteria in Phase 2 (i.e., high school graduation) and geographic location of the participants, the Phase 2 sample was limited across age, race, ethnicity, and SES.

Phase 3 participants included a combination of university students from both Portland State University and Oregon State University ($n = 217$). Students who were taking Human Development and Family Sciences courses at Oregon State University during the fall of 2004 were forwarded three e-mails asking them to complete a web

survey. Students in Child and Family Studies classes at Portland State University during the fall of 2004 were also asked, in a classroom setting and via e-mail, to participate in the web survey. Professors at the two Universities forwarded three e-mails to students, the first informed students about the project and the process (Appendix F). Three e-mails, similar to Phase 2, were also sent to students encouraging them to participate (Appendices G, H, & I). The total sample of Phase 2 and 3 participants increased to 260.

Because women are more likely to participate in research than men, I regularly monitored the number of men versus women in the sample throughout data collection. I purposefully identified two large undergraduate classes at Oregon State University that contained a 60% male- to- 40% female ratio to encourage and to increase the number of men in the sample.

Measures

The welcome page of the Sibling Relationship in Early Adulthood Survey informed respondents of their participation rights as required by the Institutional Review Board at Oregon State University. At the bottom of the informed consent page, participants were asked to click the “I understand” box before proceeding with the remainder of the survey (Appendix J).

Each participant was then asked a single question to identify a target sibling for this project. The target sibling was a full biological sister or brother 18 years or older. The question, “Of the full siblings indicated in Question 9 or 2, which one is 18 years or older and will celebrate a birthday next (including today)? Please write this sibling’s date of birth,” was used to identify the target sibling used in reference to the remaining survey

questions. Version 1 of the 24-item survey can be seen in Appendix K, and Version 2 can be seen in Appendix L.

Dependent Variables

The four dependent variables for this project were intimacy, phone contact, e-mail contact, and personal visits. Intimacy was measured using a 17-item scale of intimacy in close relationships. Three forms of contact were assessed.

Sibling Intimacy

Intimacy between siblings was measured using a 17-item Intimacy Scale created to measure levels of intimacy in close relationships (Walker & Thompson, 1983; Appendix M). This multidimensional construct of intimacy measures different aspects of emotional closeness such as a feeling of relationship importance, affection, honesty, respect, altruism, and solidarity. Participants were asked to read the 17 statements and indicate their perception of each using a six-point scale: *never* (1), *rarely* (2), *sometimes* (3), *often* (4), *almost always* (5), and *always* (6). Five of the statements were altered as appropriate for sibling ties. A statement reading “she always makes me feel better” was changed to “this sibling always makes me feel better” for clarity.

Participant responses to the 17-item scale were averaged, with individual scores ranging from 1 (*lowest intimacy*) to 6 (*highest intimacy*). Responses to the intimacy scale ranged from 1 to 6, with a mean of 4.93 ($SD = .94$), indicating high sibling intimacy for the 260 respondents and their siblings. The skewness (-1.10) and kurtosis (.64) of the intimacy variable indicated there was not a normal distribution. Chronbach’s alpha for the intimacy measure was .97. This scale has not been tested using a nationally representative sample.

Phone Contact

Phone contact included both cellular and telephone contact. Phone contact was measured using a single question: “How often do you and your sibling talk to each other on either a cell phone or telephone?” Participants were asked to indicate their level of phone contact using a 9-point scale ranging from: *never* (1), *once a year* (2), *several times a year* (3), *once a month* (4), *several times a month* (5), *once a week* (6), *several times a week* (7), *once a day* (8), to *several times a day* (9). Phone contact was coded from 1 (*least phone contact*) to 9 (*most phone contact*). Responses to phone contact ranged from 1 to 9 with an average of 5.48 ($SD = 1.68$), indicating participants talk on the phone to their sibling, on average, once a week. The skewness (-.28) and kurtosis (-.39) of phone contact indicated a slightly skewed distribution.

E-Mail Contact

E-mail contact was measured using a single question: “How often do you and your sibling e-mail each other?” Participants were asked to indicate their frequency of e-mail contact using a 9-point scale: *never* (1), *once a year* (2), *several times a year* (3), *once a month* (4), *several times a month* (5), *once a week* (6), *several times a week* (7), *once a day* (8), to *several times a day* (9). E-mail contact was coded from 1 (*least e-mail contact*) to 9 (*most e-mail contact*). Responses to e-mail contact ranged from 1 to 9 with an average of 3.37 ($SD = 2.11$), indicating participants e-mail one another, on average, once a month. The skewness (.52) and kurtosis (-.84) of e-mail contact indicated a non-normal distribution.

Personal Visits

Visits were measured using a single question: “How often do you and your sibling visit each other in person?” Participants were asked to indicate their level of personal visits using a 9-point scale ranging from: *never* (1), *once a year* (2), *several times a year* (3), *once a month* (4), *several times a month* (5), *once a week* (6), *several times a week* (7), *once a day* (8), to *several times a day* (9). Personal visits were coded from 1 (*least frequent visits*) to 9 (*most frequent visits*). Responses to sibling visits ranged from 1 to 9 with an average of 4.47 ($SD = 1.80$), indicating participants visits with their siblings, on average, several times a month. The skewness (.64) and kurtosis (.05) of personal contact indicated a near normal distribution relative to the other dependent variables.

Independent Variables

The independent variables for this project include gender composition and the three life transition statuses common in early adulthood including coresident status, intimate relationship status, and parental status.

Gender Composition

Both the gender of participants and their target siblings were assessed using two questions. Participants were given two response options, with *males* coded equal to 0 and *females* coded equal to 1. Using the two gender questions answered by participants, four new variables were then created that identified the gender of participants in relation to their target sibling. This variable allowed me to identify the gender composition of the sibling pairs. Participants who reported being a female and identified their sibling to be female as well were identified as *sister-sister pairs* and coded as 1 with all other pairs coded as 0 ($n = 125, 38.6\%$). Participants who reported being female, but identified their

sibling as a male, were identified as *sister-brother pairs* and coded as 1, with all other pairs coded as 0 ($n = 130$, 40.1%).

Brother-sister pairs were identified when participants identified themselves as male and their sibling as female. All *brother-sister pairs* were coded as 1 for this variable with all other pairs coded 0 ($n = 26$, 8.0%). The fourth dichotomous variable identified the *brother-brother pairs*, and included those participants who reported both they and their siblings were male ($n = 26$, 8.0%).

Coresident Status

Transition out of the parental home was assessed using four questions.

Participants were asked “Do you still live with your parents?” with response categories of *yes* (1) and *no* (0). The second question asked participants “If yes, does this sibling also live with your parents at least half the year or more?” Again response categories were *yes* (1) and *no* (0). The third question asked participants “If no, do you and this sibling live together?” with response categories of *yes* (1) and *no* (0). The fourth and final question asked participants “If no, does your sibling live with your parents at least half the year or more?” The same response categories were used for this question, *yes* (1) and *no* (0).

One variable identified the living arrangements of participants in relation to their target sibling. Participants who *coresided with their sibling* either in their own home or in their parents’ home were coded 4 ($n = 9$, 2.8%). Participants and siblings who *lived apart (not with parents)* were coded 3 ($n = 175$, 54.3%). Those whose *sibling’s still lived with their parents* were coded as 1 ($n = 105$, 32.6%). Those who *lived in their parents’ home but not with sibling* were coded as 2 ($n = 33$, 10.2%). Siblings who lived away from

home part of the year to attend college, but lived with parents the remainder of the year were identified as living apart.

Four new variables were then created from this variable that identified the living arrangements of participants in relation to their target sibling. The first variable identified those who *coresided with their sibling* as 1 and all other pairs were coded as 0. New variables were created for each of the three additional sibling pairs: those who *lived apart (and away from home)*, those who *lived away from their parents but whose sibling lived with their parents*, and those who *lived in their parents' home but whose siblings had moved out*.

Intimate Relationship Status

Relationship status was assessed using two questions. Participants were asked: “What is your current marital or intimate relationship status?” Response categories included *married, remarried, cohabiting, never married, divorced or separated, widowed, and other (please specify)*. An identical question asked about the target sibling's current relationship status. I then coded those who were not married (divorced or separated, widowed, and never married) equal to 0 and those who were married, remarried, or cohabiting equal to 1 for both participants and their target sibling. A variable was then created that identified the status of each participant in relation to the target sibling ranging from 1 to 4 ($M = 3.19, SD = 1.07$). *If both the participant and the sibling were unmarried*, the pair was coded 4 ($n = 172, 56.6%$). *Participants and siblings who were both married* were coded as 1 ($n = 36, 11.8%$). Those who were *married but whose siblings were single* were coded as 2 ($n = 41, 13.5%$). Finally those who were *single with a target sibling who was married* were coded as 3 ($n = 55, 18.1%$). Because

the previous literature identified cohabitation as a dynamic precursor to marriage, I combined cohabitating and married participants (Smock, 2000). There were not enough participants who reported cohabiting to create an additional paired group.

I then created four new variables that identified the relationship status of participants in relation to their target sibling. The first variable identified those who were *both unmarried* as 1 and all other pairs were coded as 0. New variables were created for each of the three additional sibling pairs: those *participants and siblings who were both married*, those participants who were *married but whose siblings were single*, and finally those participants who were *single with a target sibling who was married*.

Parental Status

Parental status was assessed using two questions. Participants were asked, “How many biological, adopted, or stepchildren do you have, if any?” Participants were then asked to indicate the number of *biological*, *adopted*, and *stepchildren*. An identical question was also asked about the target sibling. A dichotomous variable was created. Those who have *no biological children* were coded as 0 and those who have biological children were coded 1.

A new variable was then created that identified the parental status of participants in relation to their target siblings. If the participant and their sibling were *both childless* they were coded as 4 ($n = 233, 77.7\%$). When participants and siblings *both had biological children* the pair was coded 1 ($n = 16, 5.3\%$). *Respondents who were parents but whose siblings were not* were coded as 2 ($n = 19, 6.3\%$). *Participants without children whose target sibling had biological children* were coded as 3 ($n = 32, 10.7\%$).

Four new variables were then created that identified the parental status of participants in relation to their target sibling. The first variable identified those who were *both childless* as 1 and all other pairs were coded as 0. Each of the three additional sibling pairs was represented as follows: those *who both had biological children*, those who were *parents but whose siblings were not*, and those participants who *had no children but whose target sibling did*.

Control and Background Variables

Demographic and background information including race, education, age difference, distance from sibling, number of siblings, birth order, and nature of contact was assessed using a series of questions. These variables were controlled in all analyses, unless otherwise stated.

Number of Sisters and Brothers

The number of siblings a participant had was measured using a single question. Participants were asked: “How many sisters and brothers do you have in your family (this includes all your full, half, adopted, and step brothers and sisters)? Please indicate how many of each.” Full siblings are brothers and sisters who have the same biological parents. Half siblings are brothers and sisters who share only one biological parent. Stepsiblings are the siblings in a family who do not share any biological connection but are related by marriage. Adopted siblings include all siblings legally adopted by one or both parents. Participants were asked to write in the number of siblings they had in each of the four categories. This question was necessary to identify the potential full siblings to be utilized when answering the remainder of the survey.

Four variables were created representing each of the sibling categories: number of full siblings, number of half siblings, number of adopted siblings, and number of stepsiblings. The number of full siblings ranged from 1 to 10 and was used as a control variable in all analyses ($M = 1.60$, $SD = 1.14$).

Age Difference

A single question asked participants their date of birth. A second question then asked participants: “Of the full siblings indicated in the previous question, which one will celebrate a birthday next (including today)? Participants were given a date format (MM/DD/YY) to answer each of the questions. Age of participants and the age of their sibling were used to determine both the age difference between siblings and which sibling is older. The date of birth of both participants and their siblings was recoded into century month. The century month of target siblings was then subtracted from the century month of participants to determine the number of months apart siblings are in age. Participants who are represented by a negative number of months indicated the target sibling is older than the participant sibling. The *mean* number of months apart was -1.38 , with a *SD* of 102.13.

Birth Order

Birth order is the birth position participants hold in relation to their full siblings; examples of birth order include first born and second born. Two questions asked the participant to rank their own birth order and the birth order of their sibling. The two questions asked “Where do you fall in birth order with your full sibling(s)?” and “Where does this sibling fall in birth order with your full siblings?” Ten response categories were provided ranging from 1st to 10th or more. Birth order was coded 1st equal to 1, 2nd equal

to 2, 3rd equal to 3, 4th equal to 4, 5th equal to 5, 6th equal to 6, 7th equal to 7, 8th equal to 8, 9th equal to 9, and 10th or more equal to 10. The mean birth order of the target sibling is 1.82 ($SD = .93$), meaning the target sibling was on average the second born child in relation to their biological siblings. The mean birth order for the participants was similar to that of the target sibling, 1.87 ($SD = .98$) Birth order ranged from 1st to 8th for target siblings and from 1st to 6th for participants.

Race

A single question asked participants to self-identify their race/ethnicity. Because the race/ethnicity of the target sibling is identical to that of the participant, only participants' race/ethnicity was collected. Response options included *Hispanic or Latino*, *American Indian or Alaskan Native*, *Black or African American*, *White (non-Hispanic)*, *Asian*, *Native Hawaiian or Pacific Islander*, and *Other*. For analytic purposes race and ethnicity was recoded into a new variable that dichotomized race into two categories, White = 0 (87%) and non-White = 1 (13%).

Education Level

Education level was measured using two identical questions, one about participants and the other about their target siblings' education. Both questions asked "How much schooling have you completed," followed by, "Check **only** the highest level completed or degree received. If currently in school, check the level of the last grade completed or the highest degree received." Response options for both questions are *some high school but no degree* (1), *high school graduate or GED* (2), *some college but no degree* (3), *Associate's degree (academic or occupational)* (4), *Bachelor's degree* (5), *Master's degree* (6), and *Professional or Doctoral degree* (7). Education is a continuous

variable ranging from 1 through 7, with (1) being the *lowest education* and (7) being the *highest education* for both participants and their target siblings.

The average level of education for target siblings was 3.01 with a *SD* of 1.60, indicating that target siblings on average have some college. Participants' mean education was 3.23, with a *SD* of .90, indicating they have a similar level of education to target siblings.

Distance From Sibling

Distance from sibling represents the number of miles participants live from their sibling. A single question asked participants, "If you wanted to visit this sibling, how many miles would you need to drive to reach the place he or she lives?" Two questions were used to assess distance from sibling. The first question asked, "Do you and this sibling live together?" This question helped to identify the coresidential status of sibling pairs.

Those who answered yes (1) were prompted to skip the next question on the survey, but those who answer no (0) were asked, "If you wanted to visit this sibling, how many miles would you need to drive to reach the place he or she lives?" Participants were given an open response category. The distance from sibling variable was created using the responses in miles that participants provided. The distance from sibling responses were highly skewed because of the geographic limitations of the sample, so a log transformation was performed and used for all analyses ($M = 1.87$, $SD = 1.10$). Because some participants reported zero as their distance from sibling, to eliminate negative scores, it was necessary to add 1 to all scores before performing the log transformation.

Nature of Contact

The nature of contact or valence of sibling interaction was assessed using three questions, each one associated with each type of contact (cellular and telephone contact, email contact, and personal visits). The nature of phone contact was measured using a single question: “When phoning one another, you typically feel . . .” Participants were asked to indicate their nature of contact using a 5-point scale ranging from: *mostly negative* (1), *somewhat negative* (2), *have mixed feelings, both negative and positive* (3), *somewhat positive* (4), *mostly positive* (5). The nature of phone contact was coded from 1 (*least positive phone contact*) to 5 (*most positive phone contact*). The mean valence 4.51, with a *SD* of .86, indicated that siblings’ phone contact was, on average, somewhat positive.

The nature of e-mail contact was measured using a single question: “When e-mailing one another, you typically feel . . .” Using the same 5-point scale, the nature of e-mail contact was coded from 1 (*least positive e-mail contact*) to 5 (*most positive e-mail contact*). The average nature of e-mail contact was 4.61, with a *SD* of .79. The nature of personal visits was measured using a single question: “When visiting one another, you typically feel . . .” Using the same 5-point scale, the nature of personal visits was coded from 1 (*least positive personal visits*) to 5 (*most positive personal visits*). Similar to the phone and e-mail contact of siblings, the personal visits were, on average, somewhat positive ($M = 4.52, SD = .87$).

Qualitative Questions

Based on the responses to coresidence quantitative questions, participants were asked one or two open-ended questions. The two questions asked participants “If you no longer share a residence with this sibling, how did your moving away affect your

relationship?” and “If you no longer share a residence with this sibling, how did their moving away affect your relationship?” These questions were designed to provide a retrospective look at the effect of the actual transition experienced by the sibling pair. Responses from the two questions were used to interpret the quantitative findings and to help identify the influence of living apart on contact and intimacy in early adulthood.

Based on the responses to intimate relationship status questions, participants were asked one or two open-ended questions. The two questions asked participants “If you are married or you cohabit, how did getting married or moving in with your partner affect your relationship with this sibling?” and “If your sibling is married or cohabits, how did their getting married or starting to cohabit affect your relationship?” Both open-ended questions provided a retrospective look at the effect of the actual transition experienced by the sibling pair. Responses from the two questions were used to interpret the quantitative findings and to help identify the influence of marriage and cohabitation on contact and intimacy in early adulthood.

Based on responses to the parental status questions, participants were also asked one or two open-ended questions. The two questions asked participants “If you have a biological child, how did becoming a parent affect your relationship with this sibling?” and “If your sibling has a biological child, how did their becoming a parent affect your relationship?” Both open-ended questions provided a retrospective look at effect of the actual transition that was experienced by the sibling pair. Responses from the two questions were used to interpret the quantitative findings and to help identify the influence of parental status on contact and intimacy in early adulthood.

Web Survey

The survey was located on the Internet using the web-based software company Survey Monkey (www.surveymonkey.com). Survey Monkey allowed me to build an interactive survey using the tools provided by their online program. This program allowed for an effective survey to be built, using many different formats and features to make the survey manageable for any user. Once the survey was constructed and pretested, the Survey Monkey administrator assigned a web address to the survey. This web address or URL was then inserted into informative letters and sent to participants via e-mail or by U.S. mail (Appendix D & H). The survey was accessible only to those receiving the URL. For participants to complete the survey, they needed a computer with Internet access, and simply to click the link provided. When entering the survey, participants were greeted by an introductory page and given information about their participation in the project as required by the Institutional Review Board at Oregon State University.

The web survey was simple to navigate, even for beginning Internet users. Those who participated were not asked for identifying information and they have remained anonymous to both Survey Monkey staff and to me. Participants were asked to complete the survey only once. To address the possible occurrence of multiple responses from the same participant, I looked for but did not find duplicate responses in the data before proceeding with all analyses.

Procedure

Overview

Pilot Data Collection

During the spring term of 2004 at Oregon State University, I received permission to enter a single undergraduate HDFS Family Development class of 75 students. After receiving permission from the instructor, I attended the course on a predetermined date and asked students to help test two web-based survey measures (Appendix N). Those who agreed to participate were split into two groups. Group 1 was given a web address for Version 1 of the Sibling Relationship in Early Adulthood Survey (Appendix K), and Group 2 was given Version 2 of the same survey (Appendix L). Students were encouraged to complete the survey on their own time at any computer they chose. Students were also encouraged not to share the web addresses with others outside the class. Students were given a week (seven days) to complete the web survey before they were locked out.

Version 1 of the survey presented demographic and background questions first followed by the dependent measures. Version 1 was also presented using shades of orange that are similar to the colors of Oregon State University. Version 2 of the survey presented dependent measures first, followed by the background and demographic questions. This version was presented in bright spring colors (pastel green and blue).

After seven days passed, I reentered the class and discussed the format and flow of the web-based survey with students who attempted to complete or who completed the survey. I asked a series of questions that can be seen in Appendix O. All students in the class and the instructor were thanked for their feedback and time.

Primary Data Collection

Contact was made with a series of high school class reunion organizers in the Portland, Oregon area. A list of schools located in the four counties comprising the

greater Portland area was constructed. The names of all the public high schools in the four counties were randomly drawn out of a hat and placed onto a contact list. Contact information for schools was then compiled using the Internet and local Portland phone books. Starting at the top of the list, I contacted the first 20 high schools looking for phone and e-mail contact information for reunion committees coming up on their 5th-, 10th-, and 15th-year reunions. Once contact information was obtained, reunion committees were contacted by phone (Appendix A). Reunion organizers were given background information and asked to participate in this dissertation project. Those requesting further information were sent an information packet (Appendix B).

When reunion organizers agreed to participate in the project, they were asked to provide e-mail or contact information for all available class members (e-mail information was preferred). All reunion organizers preferred forwarding information to classmates from their own e-mail accounts rather than releasing e-mail addresses to me. Class reunion organizers were also asked if they would like to include up to three predetermined questions on the web-survey specific to their 5, 10, or 15- year class reunion. None of the class reunion groups that participated utilized this option.

Upon receiving agreement to forward a series of e-mails to classmates, a form e-mail was sent to committee members, who then forwarded the e-mail to other members of the class (Appendix C). This initial e-mail informed class members about the project and the forthcoming e-mail that contained the sibling survey web address. Once committee organizers indicated they had sent the informative e-mail, I contacted class members with a second e-mail (Appendix D) that included information about the project and the URL for the sibling survey. Students who did not have e-mail or access to a

computer were sent the survey via U.S. mail with the help of class reunion committee members. The form e-mail encouraged those individuals showing interest in the project to fill out a short web-based questionnaire about their sibling relationship. A reminder e-mail (Appendix E) was sent to all class members after two weeks had passed encouraging them to complete the web survey if they had not already done so.

In the event that a class reunion committee did not want to participate, members were thanked and the next school on the list was contacted. A detailed log of high schools that were contacted was maintained to ensure a school was not contacted twice. When the list of 20 schools was exhausted, I continued to contact high school reunion committees until all the schools in the Portland, OR area had been contacted. Each class was given a reasonable timeline to complete the survey process. All schools participating received a two-week follow up e-mail.

After exhausting the list of high schools and their reunion committees, the minimum quota of participants was not reached. At that time, I decided a secondary sample of participants would need to be drawn. In the fall of 2004, an e-mail (Appendix F) was sent to professors in two departments at two Oregon based public universities asking for participation in the sibling project. All six professors contacted agreed to help as needed. With Professor support, the students in five Human Development and Family Sciences classes at Oregon State University were asked to complete the same web survey as those receiving e-mail from their class reunion committee members. Three additional classes in the Child and Family Studies Program at Portland State University were also informed in person or via e-mail and encouraged to participate in the project.

At Oregon State University, the five classes ranging in size from 60 to 350 students were informed about the project by professors and then sent an informative e-mail (Appendix G). At the same time, three professors at Portland State University, with classes ranging in size from 35 to 125 students, were informing students about the project as well. A series of e-mails were sent to students at both Universities, the information e-mail (Appendix G), the e-mail containing the URL and instructions for the sibling survey (Appendix H), and a reminder e-mail (Appendix I). With the additional student participation from Portland State University and Oregon State University, the sample for the project quickly increased by 217 participants, pushing the total sample to 260.

The data collection portion of the project was completed once all high school class reunion committees had been exhausted and the indicated data collection period had ended for students at Oregon State University and Portland State University. With the completion of data collection, the Survey Monkey program was asked to place participant responses into an excel data file, which was then uploaded into SPSS for data management and analysis purposes. Qualitative responses were removed from the excel file and placed into word documents before the data were uploaded into SPSS. Descriptive statistics for all dependent, outcome, and control variables can be seen in Table 3.1.

Table 3.1

Descriptive Statistics on all Demographic, Dependent, Independent, and Control Variables (N = 260)

Variables	<i>M or %</i>	<i>SD</i>	<i>Range</i>
Demographic variables			
Age of participant (yrs)	22.16	4.92	14.42 – 46.50
Age of sibling (yrs)	22.73	6.51	10.83 – 54.92
Dependent variables			
Intimacy	4.93	.94	
Phone contact	5.48	1.69	
E-mail contact	3.37	2.11	
Personal contact	4.47	1.80	
Control variables			
Biological siblings ^a	1.60	1.14	0 – 10
Age difference ^b	1.50	102.13	-386 – 935
Participant birth order ^c	1.87	.98	1 – 5
Sibling birth order ^c	1.82	.93	1 – 7
Race ^d	87%		0 – 1
Participant education ^e	3.23	.90	1 – 5
Sibling education ^e	3.01	1.60	1 – 5
Distance from sibling ^f	1.87	1.10	-1.30 – 4.18
Gender composition			
Sister-sister pairs	40.7%		0 – 1
Sister-brother pairs	42.3%		0 – 1
Brother-sister pairs	8.5%		0 – 1
Brother-brother pairs	8.5%		0 – 1
Coresident status			
Coreside with sibling	2.8%		0 – 1

(Table 3.1 continues)

(Table 3.1 continued)

Variables	<i>M or %</i>	<i>SD</i>	<i>Range</i>
Both live away from home	54.3%		0 – 1
Participant with parent	10.2%		0 – 1
Sibling with parent	32.6%		0 – 1
Intimate relationship status			
Both single	56.6%		0 – 1
Sibling married	18.1%		0 – 1
Participant married	13.5%		0 – 1
Both married	11.8%		0 – 1
Parental status			
Both childless	77.7%		0 – 1
Sibling is parent	10.7%		0 – 1
Participant is parent	6.7%		0 – 1
Both parents	5.0%		0 – 1

^aNumber of biological siblings. ^bNumber of months. ^c1 = 1st through 10 = 10th or more. ^d0 = *White*, 1 =

Non-White. ^e1 = *lowest education*, 7 = *highest education*. ^fDistance from sibling: logged number of driving miles from sibling.

* $p < .05$. ** $p < .01$. *** $p < .001$.

CHAPTER FOUR

RESULTS

Pilot Data Analysis

Pilot data were collected from 49 undergraduates in a single class at Oregon State University. Pilot data collection used two versions of the web-based survey to determine the flow and order effects of the instrument. Version 1 of the sibling survey (Appendix K) was completed by 25 students (22 women, one man, and two unknown). Version 2 of the survey (Appendix L) was completed by 24 students (21 women, 2 men, 1 unknown). It was expected that the questions related to intimacy and contact (dependent variables) would be skipped or left incomplete if presented toward the end of the survey because of its length, so two versions of the survey were presented to a 400-level Human Development and Family Sciences class at Oregon State University during the spring term of 2004.

The pilot study revealed there were subtle differences in the intimacy and contact responses from participants depending on which version of the survey was completed, but no significant differences overall. Missing data analysis indicated more students skipped or did not complete Version 1 of the sibling survey, as compared to Version 2. When looking specifically at phone contact, those who completed Version 1 reported a mean of 4.55, whereas that of Version 2 was slightly higher at 5.65. The mean scores for e-mail contact indicated just the opposite of phone contact with those completing Version 1 ($M = 4.70$) having higher overall e-mail contact compared to those completing Version 2 ($M = 3.35$). Personal contact for the two survey groups was similar, with Version 1 respondents ($M = 4.55$) indicating slightly higher personal contact than Version 2

respondents ($M = 4.17$). Similar findings were seen across the intimacy measure, with all but one of the 17-intimacy questions reflecting higher averages in Version 2 of the survey.

Verbal feedback received from students was also taken into consideration when choosing which version of the survey would be used for the primary data collection. Approximately one week after students were given the URL to access the online survey, I returned to the class to discuss their thoughts on the process. Students indicated confusing language on a handful of demographic questions and a single intimacy question. Those who completed the orange and black survey (Version 1) felt the survey would benefit from a neutral color scheme, so as not to offend those who are not Oregon State University fans. Those who completed Version 2 thought it was well constructed and the order of questions made sense. Those who completed Version 2 indicated that the sheer number of demographic questions at the beginning made the survey boring and too personal too quickly.

Pilot data analysis allowed me to determine which survey was most effective. It was determined that Version 2 of the survey with a few changes in language would be used for primary data collection, because of its more organized flow and presentation. Data from the pilot study were not used in any subsequent analyses.

Primary Data Analysis

This study examined the intimacy and the contact of biological siblings in early adulthood in relation to their self-reported gender and life transitions. Coresidential status, intimate relationship status, parental status, and gender were hypothesized to influence the intimacy, phone, e-mail, and personal contact biological siblings share in

early adulthood. Primary data were collected from 43 community members and 280 students taking Human Development and Family Sciences courses at Oregon State University and Child and Family Studies courses at Portland State University in the fall of 2004. The original sample collected consisted of 255 women and 52 men, and 16 respondents who did not report gender ($n = 323$).

Primary data were successfully transferred into SPSS, qualitative data were placed into a separate word document, and data were cleaned and prepared for analyses. Once clean, a missing data analysis was run. Because there was a minimal amount of missing data, it was determined EM (expectation maximization) analysis was not necessary. All independent, dependent, and control variables were then computed and recoded as indicated in the measures section. Correlations for all predictor, outcome, and control variables were run and are presented in Table 4.1. After missing data were removed, the final sample totaled 260 (215 women, 45 men).

A series of hierarchical multiple regression analyses were performed to identify the influence of control variables, gender composition variables, coresident status variables, intimate relationship status variables, and parental status variables on sibling intimacy and the three contact variables. Each of the four hypotheses was tested using a series of hierarchical regressions, one each for intimacy, phone contact, e-mail contact, and personal contact.

All hierarchical regression analyses were run controlling for race, number of biological siblings, birth order of participant, birth order of sibling, participant's education level, sibling's education level, age difference, and distance from sibling. Variables were loaded in the following order: control variables (Model 1), gender

Table 4.1 *Correlations for Outcome, Control, and Predictor Variables (N = 260)*

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Dependent variables												
1. Intimacy	-											
2. Phone contact	.53***	-										
3. E-mail contact	.40***	.36***	-									
4. Personal contact	.21***	.53***	.02	-								
Control variables												
5. Biological siblings ^a	.03	-.07	-.09	-.05	-							
6. Age difference ^b	-.07	-.10	-.10	-.07	.02	-						
7. Participant Birth order ^c	.01	-.11	-.05	-.01	.54***	.30***	-					
8. Sibling Birth order ^c	.04	-.01	-.08	-.03	.50***	-.20**	.03	-				
9. Race ^d	.28	.02	.08	.00	.13*	-.03	.01	.10	-			
10. Participant education ^e	-.05	-.05	.21***	-.13*	-.01	-.06	-.09	.03	.07	-		
11. Sibling education ^e	.21***	.08	.30***	-.01	.02	.16**	.32***	-.28***	.08	.35***	-	
12. Distance from sibling ^f	.02	-.27***	.10	-.66***	.00	.05	.02	.04	.03	.08	.05	-
Gender composition												
13. Sister-sister pairs	.12*	.26***	.15**	.11*	.08	.06	.03	-.04	.02	-.02	.09	-.07
14. Sister-brother pairs	-.02	-.14*	-.11*	-.10	-.11*	-.01	-.09	-.06	.03	-.02	-.07	.05

(Table 4.1 continues)

(Table 4.1 continued)

Variables	1	2	3	4	5	6	7	8	9	10	11	12
15. Brother-sister pairs	-.06	-.08	-.06	-.03	.02	-.17**	.04	.10	-.07	.00	.02	-.01
16. Brother-brother pairs	-.11*	-.13*	.00	-.00	.03	.09	.06	.09	-.02	.07	-.06	.05
Coresident status												
17. Coreside with sibling	.03	.07	.07	.35***	-.06	-.04	.07	-.11*	.14*	.07	.15**	-.35***
18. Both live away from home	.02	-.05	.15**	-.21***	-.03	.27***	.22***	-.27***	-.10	.16**	.40***	.11
19. Participant with parents	.01	-.01	-.11	.04	.06	-.03	.03	.05	.00	-.10	-.06	-.10
20. Sibling with parents	-.04	.03	-.12*	.07	.01	-.26***	-.27***	.30***	.06	-.13*	-.45***	.08
Intimate partnership status												
21. Both single	.06	.13*	.03	.16**	-.04	-.16**	-.20**	.14*	-.02	-.32***	-.25***	-.03
22. Sibling married	.03	-.04	-.04	-.02	.10	.23***	.33***	-.12*	-.06	-.00	.18**	-.03
23. Participant married	-.05	-.07	-.05	-.07	.04	-.03	-.05	.03	.09	.26***	.06	-.00
24. Both married	-.08	-.08	.06	-.14*	-.09	.00	-.03	-.11	.01	.21***	.11	.09
Parental status												
25. Both childless	.22***	.19**	.09	.19***	-.06	-.09	-.16**	.04	.06	-.20**	-.06	-.03
26. Sibling is parent	-.16**	-.11	-.08	-.06	.12*	.15**	.23***	-.14*	-.08	.07	.05	.02
27. Sibling is childless	-.01	-.02	.01	-.07	-.04	-.11	-.10	.08	.09	.15*	.03	.00
28. Both parents	-.19**	-.18**	-.07	-.20***	-.01	.06	.08	.04	-.08	.11	.01	.01

^aNumber of biological siblings. ^bNumber of months. ^c1 = 1st through 10 = 10th or more. ^d0 = *White*, 1 = *Non-White*. ^e1 = *lowest education*, 7 = *highest education*. ^fDistance from sibling; logged number of driving miles to sibling. * $p < .05$. ** $p < .01$. *** $p < .001$.

(Table 4.1 continued)

Variables	13	14	15	16	17	18	19	20	21
14. Sister-brother pairs	-.71***	-							
15. Brother-sister pairs	-.25***	-.26***	-						
16. Brother-brother pairs	-.25***	-.26***	-.09	-					
Coresident status									
17. Coreside with sibling	.01	-.03	.02	.02	-				
18. Both live away from home	.00	.01	-.01	-.01	-.19**	-			
19. Participant with parents	-.00	.05	-.03	-.07	-.06	-.37***	-		
20. Sibling with parents	-.01	-.03	.02	.05	-.12*	-.76***	-.24***	-	
Intimate partnership status									
21. Both single	-.04	-.02	.02	.08	.08	-.37***	.02	.36***	-
22. Sibling married	.04	-.06	.11	-.08	-.03	.25***	.06	-.30***	-.54***
23. Participant married	.02	.03	-.08	-.02	-.07	.10	-.04	-.06	-.45***
24. Both married	-.02	.06	-.07	-.00	-.00	.17**	-.06	-.14*	-.42***
Parental status									
25. Both childless	-.07	.08	-.09	.08	.05	-.22***	.03	.20***	.50***
26. Sibling is parent	.09	-.12*	.12*	-.07	.00	.12*	.06	-.17**	-.35***
27. Sibling is childless	-.05	.03	.02	.02	-.05	.07	-.05	-.03	-.21***
28. Both parents	.06	-.01	-.02	-.07	-.04	.18**	-.08	-.12*	-.22***

(Table 4.1 continued)

Variables	22	23	24	25	26	28	29
23. Sibling single	-.19**						
24. Both married.	-.17**	-.15*					
Parental status							
25. Both childless	-.26***	-.20**	-.25***	-			
26. Sibling is parent	.40***	.02	.04	-.65***	-		
27. Sibling is childless	-.12*	.26***	.20**	-.49***	-.09	-	
28. Both parents	.06	.05	.21***	-.43***	-.08	-.06	-

composition variables (Model 2), residential status variables (Model 3), intimate relationship status variables (Model 4), and finally the parental status variables (Model 5). Responses to open-ended questions were organized by question and quotes were selected to emphasize and support the quantitative analyses in the discussion. Open-ended responses that were not reflective of the quantitative results were also identified.

Sibling Intimacy

The first hierarchical regression addressed the influence of gender composition and three life transitional statuses (coresidential status, marital status, and parental status) on the intimacy between siblings. Table 4.2 presents results of the hierarchical regression analysis of sibling intimacy.

Model 1 identified a significant linear relationship between sibling intimacy and the eight control variables ($R^2 = .08$, $F(8,251) = 2.59$, $p < .01$), indicating that 8% of the variance in sibling intimacy can be predicted by the combined effects of the eight control variables. Three variables were significant. Holding all other variables constant, a single unit increase in sibling education was associated with a .18 increase in sibling intimacy ($t = 3.97$, $p < .001$), indicating that higher levels of education of the target sibling was associated with greater levels of intimacy between siblings.

The opposite is seen with participant education. Holding all other variables constant, a one unit increase in participant education was associated with lower levels of sibling intimacy ($.19$, $t = -2.68$, $p < .01$), indicating that higher levels of education for participants' was associated with lower levels of intimacy between siblings. Further, a single unit increase in sibling birth order was associated with greater sibling intimacy

Table 4.2 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Intimacy (N = 260)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>
Age Difference	-.00	.00	-.09	-.00	.00	-.11	-.00	.00	-.09
Biological Siblings	-.03	.08	-.04	-.05	.08	-.06	-.04	.08	-.05
Sibling birth order	.16	.08	.16*	.19	.08	.18*	.18	.08	.17*
Sibling education	.18	.05	.31***	.18	.05	.31***	.19	.05	.32***
Race	.02	.17	.01	-.00	.17	-.00	-.05	.17	-.02
Participant education	-.19	.07	-.18**	-.20	.07	-.19**	-.19	.07	-.18*
Participant birth order	-.07	.09	-.07	-.06	.09	-.06	-.06	.09	-.06
Distance from sibling	.04	.05	.05	.05	.05	.06	.06	.06	.07
Gender composition									
Sister-brother				-.14	.13	-.07	-.13	.13	-.07
Brother-sister				-.41	.22	-.12	-.41	.22	-.12
Brother-brother				-.27	.22	-.08	-.27	.23	-.08
Coresident status									
Live apart							-.32	.37	-.17

(Table 4.2 continues)

(Table 4.2 continued)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>
Participant with parents							-.17	.40	-.06
Sibling with parents							-.17	.40	-.08
Intimate relationship status									
Sibling is married									
Participant is married									
Both married									
Parental status									
Sibling is parent									
Participant is parent									
Both parents									
R^2		.08			.09			.10	
F for change in R^2		2.59**			1.40			1.40	

Note. Reference categories are sister-sister pairs, sibling coresides away from home, both are single, and both are childless.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(Table 4.2 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>
Age Difference	-.00	.00	-.10	-.00	.00	-.09
Biological Siblings	-.05	.08	-.06	-.04	.08	-.05
Sibling Birth Order	.18	.08	.18*	.14	.08	.14
Sibling education	.19	.05	.32***	.14	.05	.23**
Race	-.00	.17	-.00	-.09	.17	-.03
Participant education	-.13	.08	-.13	-.10	.08	-.10
Participant Birth Order	-.06	.09	-.07	-.01	.09	-.01
Distance from sibling	.07	.06	.08	.08	.06	.10
Gender Composition						
Sister-Brother	-.12	.13	-.06	-.21	.13	-.11
Brother-Sister	-.47	.22	-.14*	-.45	.22	-.13*
Brother-Brother	-.25	.23	-.07	-.40	.22	-.12
Co-resident Status						
Live Apart	-.28	.37	-.15	-.31	.36	-.16
Participant with Parents	-.17	.40	-.06	-.23	.39	-.08

(Table 4.2 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>
Sibling with Parents	-.16	.39	-.08	-.26	.38	-.13
Intimate Relationship Status						
Sibling is Married	.10	.18	.03	.29	.19	.12
Participant is Unmarried	-.23	.18	-.09	-.06	.19	-.02
Both Married	-.38	.20	-.13	-.10	.21	-.04
Parental Status						
Sibling is Parent				-.60	.21	-.21**
Participant is Parent				-.16	.24	-.04
Both Parents				-1.00	.30	-.22***
<i>R</i> ²		.12			.18	
<i>F</i> for change in <i>R</i> ²		1.97			5.40***	

(.16, $t = 2.03$, $p < .05$). So, later birth order of the target sibling (i.e., 2nd or 3rd) is associated with greater intimacy between sibling pairs.

Model 2 was not significant, indicating that, along with control variables, there is no linear relationship between gender composition variables and sibling intimacy. Three control variables (i.e., sibling education, participant education, and sibling birth order) remained significant in Model 2. Model 3 added the coresidential status variables to control and sibling composition variables. Model 3 was not significant, indicating that, along with the prior predictors, coresidential status variables have little to no influence on the intimacy between siblings. The three control variables remained significant in this model.

Model 4 also was not significant, indicating that intimate relationship status variables in combination with previous predictors, have little to no influence on sibling intimacy. Birth order and sibling education level remained significant in this model, but a third variable was identified as significant as well. Although the model was not significant, the brother–sister gender composition variable was associated with lower intimacy compared to that reported for the sister-sister pair.

The 5th and final model indicated a significant linear relationship between sibling intimacy and parental status variables ($R^2 = .18$, $F(3,239) = 5.40$, $p \leq .001$). With an R^2 change of 6%, Model 5 explained 18% of the variance in sibling intimacy. Looking more closely at the individual predictors, two of the parental status variables were significant; both had negative effects on sibling intimacy. Holding all other variables constant, a transition from being childless to being a parent was associated with lower sibling intimacy ($.60$, $t = -2.90$, $p < .01$): Relative to pairs in which both were childless, those in

which both had children and those in which the sibling had children were less intimate. Both variables indicate that parental status has detrimental effects on sibling intimacy. Sibling education level remained significant along with the brother-sister sibling pair for the final model.

Sibling Phone Contact

Table 4.3 presents results of the hierarchical regression analysis of sibling phone contact. Model 1 identified a significant linear relationship between sibling phone contact and the eight control variables ($R^2 = .12$, $F(8,251) = 4.33$, $p < .001$), indicating that 12% of the variance in sibling intimacy can be predicted by the combined effects of the eight control variables. Three of the variables were significant. Holding all other variables constant, an increase in sibling education was associated with higher sibling phone contact ($.21$, $t = 2.61$, $p < .01$): As sibling's education increased, there was an associated increase in phone contact. The opposite was seen for the education level of participants. An increase in participant's education level was associated with less phone contact between siblings ($.27$, $t = -2.14$, $p < .05$). Finally, holding all other variables constant, an increase in distance from sibling was associated with less sibling phone contact ($.39$, $t = -4.22$, $p < .001$). The model suggests that the physical distance between siblings is influential; as siblings live further apart, they have less phone contact.

Model 2 identified a significant linear relationship between sibling phone contact and predictors as well as the gender composition of sibling pairs ($R^2 = .18$, $F(3,248) = 6.23$, $p < .001$), increasing the explained variance by 6%. Sister-sister pairs had more contact than all other pairs. Both siblings' and participant's education level and distance from sibling remained significant.

Table 4.3 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Phone Contact (N = 260)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age difference	-0.00	.00	-.08	-0.00	.00	-.10	-0.00	.00	-.09
Biological siblings	-.14	.13	-.10	-.20	.13	-.13	-.22	.13	-.15
Sibling birth order	.06	.14	.03	.13	.14	.07	.09	.14	.05
Sibling education	.21	.08	.20**	.19	.08	.18*	.24	.08	.23**
Race	.05	.29	.01	.01	.29	.00	.02	.09	.01
Participant education	-.27	.13	-.14*	-.29	.12	-.15*	-.27	.12	-.14*
Participant birth order	-.18	.15	-.10	-.15	.15	-.09	-.09	.15	-.05
Distance from sibling	-.39	.09	-.25***	-.35	.09	-.23***	-.43	.09	-.28***
Gender composition									
Sister-brother				-.83	.22	-.24***	.80	.22	.24***
Brother-sister				-1.02	.38	-.17**	-1.00	.37	-.17**
Brother-brother				-.93	.38	-.15*	-.89	.38	-.14*
Coresident status									
Live apart							-.94	.63	.28

(Table 4.3 continues)

(Table 4.3 continued)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Participant with parent							-.91	.33	.17
Sibling with parent							1.36	.27	.37*
Intimate relationship status									
Sibling married									
Participant unmarried									
Both married									
Parental status									
Sibling is parent									
Participant is parent									
Both parents									
R^2		.12			.18			.20	
F for change in R^2		4.33***			6.23***			1.77	

Note. Reference categories are sister-sister pairs, sibling coresides away from home, both are single, and both are childless.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(Table 4.3 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age difference	-.00	.00	-.09	-.00	.00	-.09
Biological siblings	-.23	.13	-.15	-.24	.13	-.16
Sibling birth order	.08	.14	.05	.06	.14	.03
Sibling education	.23	.08	.22**	.16	.08	.15
Race	.11	.29	.02	.01	.29	.00
Participant education	-.16	.13	-.09	-.13	.13	-.07
Participant birth order	-.08	.15	-.05	.00	.15	.00
Distance from sibling	-.42	.10	-.27***	-.40	.10	-.26***
Gender composition						
Sister-brother	-.79	.22	-.23***	-.90	.22	-.27***
Brother-sister	-1.07	.38	-.18**	-1.10	.37	-.18**
Brother-brother	-.87	.38	-.14*	-1.09	.38	-.18**
Coresident status						
Live apart	1.09	.63	.32	1.12	.62	.33

(Table 4.3 continues)

(Table 4.3 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Participant with parent	.99	.68	.19	.91	.66	.17
Sibling with parent	1.41	.66	.39*	1.29	.65	.35*
Intimate relationship status						
Sibling married	-.11	.30	-.03	.05	.32	.01
Participant married	-.55	.31	-.12	-.30	.32	-.06
Both married	-.57	.34	-.11	-.15	.35	-.03
Parental status						
Sibling is parent				-.51	.35	-.10
Participant is parent				-.41	.41	-.06
Both parents				-1.78	.51	-.22***
R^2		.22			.26	
F for change in R^2		1.61			4.39**	

Model 3 added coresidential status variables to control and sibling composition variables. Model 3 was not significant, indicating that coresidential status added little to no influence on the phone contact between siblings. When siblings live with parents and participants live on their own, however, there was more phone contact as compared to siblings who coreside. Although the model was not significant, sibling education, participant education, and distance from sibling remained significant, as did the three gender composition variables. Model 4 also was not significant, indicating that the intimate relationship status variables added little to no influence on sibling phone contact. Once again, sibling education and distance from sibling remained significant, followed by the three gender composition variables, and the single coresidential variable (sibling with parents).

In Model 5, along with controls and other predictors, there was a significant linear relationship with sibling phone contact ($R^2 = .26$, $F(3,239) = 4.39$, $p < .01$), with parental status explaining an additional 4% of the variance in sibling phone contact. Compared with pairs in which both are childless, when both participants and their siblings have children, they have less phone contact (1.78 , $t = -3.52$, $p < .001$). Distance from sibling and gender composition remained significant. Siblings also continued to have more phone contact when the sibling lived with parents, compared to pairs in which siblings lived together but apart from parents.

Sibling E-Mail Contact

Table 4.4 presents results of the hierarchical regression analysis of sibling e-mail contact. Model 1 identified a significant linear relationship between sibling e-mail contact and the eight control variables ($R^2 = .15$, $F(8,251) = 5.34$, $p < .001$), indicating that 15%

Table 4.4 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling E-mail Contact (N =260)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age difference	-.00	.00	-.15*	-.00	.00	-.18**	-.00	.00	-.18**
Biological siblings	-.20	.17	-.11	-.26	.16	-.14	-.25	.16	-.14
Sibling birth order	.14	.17	.06	.19	.17	.08	.21	.17	.09
Sibling education	.38	.10	.29***	.37	.10	.28***	.35	.10	.27**
Race	.18	.36	.03	.21	.36	.04	.23	.37	.04
Participant education	.22	.16	.09	.18	.15	.08	-.08	.15	.07
Participant birth order	-.09	.19	-.04	-.07	.19	-.03	-.06	.19	-.04
Distance from sibling	.24	.11	.12*	.28	.11	.15*	.28	.12	.14*
Gender composition									
Sister-brother				-.97	.27	-.23***	-.97	.27	-.23***
Brother-sister				-1.23	.47	-.16**	-1.24	.47	-.16**
Brother-brother				-.10	.47	.01	-.13	.48	-.02
Coresident status									
Live apart							.02	.78	.01

(Table 4.4 continues)

(Table 4.4 continued)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Participant with parent							-.40	.84	-.06
Sibling with parent							-.17	.83	-.04
Intimate relationship status									
Sibling married									
Participant unmarried									
Both married									
Parental status									
Sibling is parent									
Participant is parent									
Both parents									
R^2		.15			.20			.20	
F for change in R^2		5.34***			5.59***			.39	

Note. Reference categories are sister-sister pairs, sibling coreside away from home, both are single, and both are childless.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(Table 4.4 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Age difference	-.00	.00	-.18**	-.00	.00	-.18**
Biological siblings	-.26	.16	-.14	-.25	.16	-.14
Sibling birth order	.20	.17	.10	.17	.17	.07
Sibling education	.34	.10	.26***	.30	.11	.22**
Race	.35	.37	.06	.28	.37	.05
Participant education	.32	.17	.14	.34	.17	.15*
Participant birth order	-.03	.19	-.02	.02	.19	.01
Distance from sibling	.27	.12	.14*	.28	.12	.15*
Gender composition						
Sister-brother	-.96	.27	-.23***	-1.04	.27	-.24***
Brother-sister	-1.31	.47	-.17**	-1.30	.48	-.17**
Brother-brother	-.15	.47	-.02	-.28	.48	-.04
Coresident status						
Live apart	.34	.78	.08	-.33	.78	.08

(Table 4.4 continues)

(Table 4.4 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Participant with parent	-.15	.84	-.02	-.21	.84	-.03
Sibling with parent	-.02	.83	-.00	-.10	.83	-.02
Intimate relationship status						
Sibling married	-.43	.37	-.08	-.28	.40	-.05
Participant unmarried	-1.06	.38	-.18**	-.92	.41	-.16*
Both married	-.46	.42	-.07	-.23	.45	-.04
Parental status						
Sibling is parent				-.46	.45	-.07
Participant is parent				-.13	.52	-.02
Both parents				-.88	.65	-.09
R^2		.23			.24	
F for change in R^2		2.59*			.80	

of the variance in sibling intimacy can be predicted by the combined effects of the eight control variables.

The pattern of results differed from those in previous analyses. Holding all other variables constant, an increase in sibling education was associated with more e-mail contact (.38, $t = 3.82$, $p < .001$). Further, as the number of miles increased between siblings, there was greater e-mail contact (24, $t = 2.08$, $p < .05$). The difference in age between siblings and participants was also a significant predictor. As the gap in age increased between siblings, there was less e-mail contact (-.15, $t = -2.31$, $p < .05$).

Model 2 identified similar results as those for phone contact. A significant linear relationship between sibling e-mail contact and controls along with the gender composition of sibling pairs was seen ($R^2 = .20$, $F(3,248) = 5.59$, $p = .001$), explaining an additional 5% of the variance. Specifically, sister-brother and brother-sister pairs had less e-mail contact than sister-sister pairs. Distance from sibling, age difference, and sibling education level remained significant. Model 3 added coresidential status variables to control and sibling composition variables. Model 3 was not significant, indicating that coresidential status variables added little to the explained variance in e-mail contact. Once again, the three control variables remained significant, as did the sister-brother and brother-sister pairs.

Model 4 was significant, indicating the addition of intimate relationship status to control and predictor variables was influential in explaining the variance in e-mail contact ($R^2 = .23$, $F(3,242) = 2.59$, $p \leq .05$). Looking more closely at the individual predictors, when both participants were single, their e-mail contact was significantly higher than when the sibling was married and the participant was unmarried. These findings suggest

that, as siblings but not participants transitioned into marriage, e-mail contact declined. The three control and two residential status variables remained significant in Model 4. Model 5 was not significant, indicating that the addition of parental status variables had little or no influence on e-mail contact among siblings. Participant education, along with the three previous control variables, was significant in this nonsignificant model. Sister-brother and brother-sister pairs, as well as those pairs in which there was an unpartnered participant but a partnered sibling, remained significant.

Sibling Personal Contact

The fourth and final hierarchical regression analysis of personal contact appears in Table 4.5. Model 1 identified a significant linear relationship between sibling personal contact and the eight control variables ($R^2 = .44$, $F(8,251) = 24.47$, $p < .001$). Only three of the control variables were significant. As seen in previous analyses, an increase in participant education was associated with less personal contact ($.30$, $t = -2.74$, $p < .01$), and an increase in sibling education was associated with more personal contact at a level just below significance ($.12$, $t = 1.74$, $p < .10$). A negative relationship was also seen for distance from sibling, in that greater distance participants lived from their sibling was associated with less personal contact (1.03 , $t = -13.06$, $p < .001$).

Model 2 added gender composition variables to Model 1 variables, but was not significant, indicating that the gender composition of sibling pairs along with controls did not influence the personal contact of sibling pairs. The three control variables, participant education level, sibling education level, and distance from sibling remained significant. Sister-brother variable was also significant at the trend ($p < .01$) level, indicating that sister-brother pairs when compared to sister-sister pairs have lower levels of personal

Table 4.5 Summary of Hierarchical Regression Analysis for Variables Predicting Sibling Personal Contact (N =260)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Age difference	-.00	.00	-.05	-.00	.00	-.06	.00	.00	-.02
Biological siblings	-.14	.11	-.09	-.17	.11	-.10	-.13	.11	-.08
Sibling birth order	-.02	.12	-.01	-.00	.12	-.00	-.02	.12	-.01
Sibling education	.12	.07	.11†	.12	.07	.10†	.16	.07	.14*
Race	.18	.25	.03	.18	.25	.04	-.03	.25	-.01
Participant education	-.30	.11	-.15**	-.31	.11	-.15**	-.29	.11	-.14**
Participant birth order	.02	.13	.01	.02	.13	.01	.03	.13	.02
Distance from sibling	-1.03	.08	-.63***	-1.02	.08	-.62***	-.96	.08	-.58***
Gender composition									
Sister-brother				-.34	.19	-.09†	-.29	.18	-.09
Brother-sister				-.47	.33	-.07	-.49	.32	-.08
Brother-brother				-.04	.33	-.01	-.11	.32	.02
Coresident status									
Live apart							-1.76	.53	-.49***

(Table 4.5 continues)

(Table 4.5 continued)

Variables	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Participant with parent							-1.72	.57	-.30**
Sibling with parent							-1.09	.57	-.28†
Intimate relationship status									
Sibling married									
Participant unmarried									
Both married									
Parental status									
Sibling is parent									
Participant is parent									
Both parents									
R^2		.44			.45			.49	
F for change in R^2		24.47***			1.42			6.88***	

Note. Reference categories are sister-sister pairs, sibling coreside away from home, both are single, and both are childless.

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

(Table 4.5 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Age difference	.00	.00	-.03	.00	.00	-.03
Biological siblings	-.14	.11	-.09	-.16	.11	-.10
Sibling birth order	-.02	.12	-.01	-.04	.12	-.02
Sibling education	.15	.07	.13*	.09	.07	.08
Race	.03	.25	.01	-.06	.25	-.01
Participant education	-.22	.11	-.11†	-.19	.11	-.09†
Participant birth order	.03	.13	.02	.11	.13	.06
Distance from sibling	-.95	.08	-.58***	-.94	.08	-.57***
Gender composition						
Sister-brother	-.28	.18	-.08	-.38	.18	.10*
Brother-sister	-.55	.32	-.09†	-.60	.32	-.09†
Brother-brother	-.09	.32	.01	-.29	.32	-.04
Coresident status						
Live apart	-1.70	.54	-.47**	-1.66	.53	-.46**

(Table 4.5 continues)

(Table 4.5 continued)

Variables	Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Participant with parent	-1.70	.58	-.30**	-1.78	.56	-.31**
Sibling with parent	-1.08	.57	-.28†	-1.19	.55	-.31*
Intimate relationship status						
Sibling married	.03	.26	.01	.11	.27	.02
Participant unmarried	-.26	.27	-.05	-.05	.27	-.01
Both married	-.48	.29	-.09†	-.11	.30	-.02
Parental status						
Sibling is parent				-.30	.30	-.05
Participant is parent				-.34	.35	-.05
Both parents				-1.74	.43	-.20***
R^2		.50			.53	
F for change in R^2		1.20			5.51***	

contact ($-.34, t = -1.79, p < .10$).

Model 3 identified a significant linear relationship between sibling personal contact and coresidential status of sibling pairs ($R^2 = .49, F(3,245) = 6.88, p < .001$). The residential status of sibling pairs increased the explained variance by 5%. Relative to pairs where both siblings live together but apart from parents, those who do not live together, and those where the sibling lives with parents have less personal contact. Compared to those who live apart from parents but with each other, there is a trend for less personal contact when the sibling lives with the parents ($1.09, t = -1.92, p < .10$). Sibling education and distance from sibling were once again significant in this model; participant education was significant as well.

Model 4 added the intimate relationship status of sibling pairs. The new model along with control and other predictor variables did not explain the personal contact between siblings. A single intimate relationship status variable was significant: Pairs in which both were married, compared to those with a single sibling, had less personal contact (trend only, $-.48, t = -1.67, p < .10$). The three control variables remained significant, as well as the three coresidential status variables.

Model 5 was significant ($R^2 = .53, F(3,239) = 5.51, p < .001$). After the addition of parental status variables, the fifth model significantly explained an additional 3% of the variance in personal contact. Looking more closely at the individual parental status coefficients, a single variable was significant. When both siblings have transitioned into parenthood, they have less personal contact than when neither is a parent ($1.74, t = -4.03, p < .001$). Participant education and distance from sibling remained significant, along with the sister-brother pair. The brother-sister variable also was significant (trend only) in

Model 5, indicating that compared to sister-sister pairs, the brother-sister pair is associated with less personal contact. The three coresidential status variables remained significant.

Open-Ended Responses

Participants answered a series of open-ended questions. Qualitative responses allowed me to identify participants' thoughts and feelings about possible changes in the sibling relationship associated with the transition out of the parental home, the transition to an intimate partnership, and the transition to parenthood. These responses were categorized as positive, neutral, negative, or mixed (both positive and negative) in Table 4.6. Table 4.6 also reports the results from a series of chi-square tests that identify whether responses to open-ended questions were evenly distributed, or whether responses were concentrated in one or more of these categories. Results indicated that, for each question, responses were concentrated in one or more of the categories.

Transition Out of Parental Home

Two open-ended questions were asked that identified the influence of the transition out of the parental home had on both participants and siblings. The first questions asked participants, "if you no longer share a residence with this sibling, how did your moving away from your sibling affect your relationship?" There were 235 open-ended responses to this question. Significantly more responses than would be expected by chance ($n = 99$, 42.1%) reported a positive influence on the relationship. About a quarter reported a negative influence ($n = 59$, 25.1%), one in five reported a mixed influence (both positive and negative, $n = 47$, 20%), and the remainder reported no change (neutral) ($n = 30$, 12.8%).

Table 4.6 *Open-Ended Questions Presented by Four Response Themes: Positive, Neutral, Negative, and Mixed*

Open-Ended Question	Total	Positive	Neutral	Negative	Mixed	$\chi^2(3)$
	<i>N</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Transition away from parental home						
Participant transition from home	235	99 (42.1)	30 (12.8)	59 (25.1)	47 (20.0)	44.00***
Sibling transition from home	158	59 (37.3)	27 (17.1)	40 (25.3)	32 (20.3)	15.06**
Transition to intimate partnership or marriage						
Sibling transition to partnership	78	29 (37.2)	20 (25.6)	24 (30.8)	5 (6.4)	16.46***
Participant transition to partnership	63	28 (44.4)	24 (38.1)	8 (12.7)	3 (4.8)	25.00***
Transition to parenthood						
Sibling transition to parenthood	45	23 (51.1)	2 (4.4)	7 (15.6)	13 (28.9)	21.76***
Participant transition to parenthood	29	17 (58.6)	2 (6.9)	7 (24.1)	3 (10.3)	19.41***

* $p < .05$. ** $p < .01$. *** $p < .001$.

Those who experienced their sibling's transition out of the home, showed a similar breakdown of themes. Of the 158 participants who shared their feelings about their sibling's transition away from home, 59 (37.3%), more than would be expected by chance, identified it as having a positive influence on their relationship. Forty (25.3%) indicated a detrimental influence, 27 (17.1%) said it had no effect, and the remainder (n = 32, 20.3%) felt it was both positive and negative.

Participants who had moved away from home gave responses that were similar to those whose siblings moved from home. One sibling shared: "It made our relationship better. Less arguing over small stuff." One quarter saw these moves as negative. One sister felt the move away from home was detrimental. She shared, "She became more independent, and it took time for us to find where we fit in each others lives now that we were really adults that could take care of each other."

Those who said the transition had little or no effect on their relationship made statements such as, "It didn't affect our relationship" and "It's the same." One of the 20% who felt the transition was both positive and negative, indicated:

It greatly affected me as an individual because my brother and I were very close and had spent a lot of time together. We still talked all the time though, on the phone and through e-mail.

Transition to Intimate Relationship Status

The second set of questions focused on the transition to marriage or intimate partnerships. Seventy-eight participants responded to the first question that asked, "If your sibling is married or cohabits, how did his or her getting married or starting to cohabit affect your relationship?" Twenty-nine (37.2%) participants-more than would be expected by chance-shared that the transition was beneficial; 24 (30.8%) reported it was

detrimental or damaging, 20 (25.6%) felt it did not change the relationship, and 5 (6.4%) shared that the relationship was influenced both negatively and positively.

When asked about the transition into cohabiting or marital relationships for participants, 63 participants shared their feelings, 28 (44.4%) of which were positive, more than would be expected by chance. Eight (12.7%) were negative (also more than would be expected by chance), 24 (38.1%) were neutral, and 3 (4.8%) indicated mixed influences on their relationship.

Responses from both questions indicated similarities across the transitions. The introduction of a new person in the life of a sibling can be wonderful for some (about 40%), but others (30.8%) reported the transition as having very detrimental effects on their sibling relationship. One sibling shared that her brother's marriage had a very negative influence not only on her, but also on her whole family:

It made it even harder for us to see each other because he was always with his wife or her family instead of with our family. Also, his wife really doesn't like my family, so she keeps him from seeing us too much. They live in the same town as my parents, and my parents don't even see them once a month. So because of his getting married, we really don't have a relationship at all anymore.

Others felt the transition to intimate partnership improved their interaction with their sibling. One sibling shared:

My older sibling being married has allowed us to open up more about relationships. We share more thoughts with one another. Her husband is very warm towards us and he is like another member of the family.

Transition to Parenthood

The transition to parenthood for both participants and their siblings was assessed using two questions answered by only those who had experienced the transition.

Participants were first asked, "If your sibling has a biological child, how did his or her

becoming a parent affect your relationship?” Forty-five participants shared their feelings, the majority of which were positive ($n = 23$, 51.1%), a proportion significantly larger than would be expected by chance. A smaller portion than expected ($n = 7$, 16%) of the participants said it had a negative or detrimental influence on the relationship, whereas 2 (4%) were neutral, and 13 (29%) were mixed.

The second question was directed at the participant’s transition to parenthood. Participants were asked, “If you have a biological child, how did becoming a parent affect your relationship with this sibling?” Twenty-nine participants shared their opinions on how their own transition to parenthood influenced their relationship. A greater proportion than expected by chance ($n = 17$, 59%) felt the transition was positive and beneficial in some way, whereas 7 (24%) indicated a negative influence. Finally, 2 (7%) were neutral and 3 (10%) gave mixed responses to this question.

In previous questions, respondents reported similar influences regardless of whether they or their sibling experienced the transition. Differences were seen with the transition to parenthood, however, as those who reported on a sibling’s rather than their own transition to parenthood seemed more likely to share that the transition was beneficial or mixed in influence. Those who reported on their own transition to parenthood felt it was mostly beneficial to the sibling relationship.

One sister indicated the beneficial aspects of her sister having a child. She shared, “She is more nurturing and so am I. We have both learned to put the life of another before ours. Our relationship is stronger because of the baby.” Not all participants felt the transition of their sibling was beneficial; many felt there were tradeoffs with the transition. One sister shared:

It [the birth] brought us closer and further. I became very close to her during the pregnancy. I was the first one she told about it, I went to Dr appointments with her and I was there when she gave birth, both times. I have also been involved in babysitting and working at the children's school. But, then again, she is very busy with them so it effects the dynamic and energy in our relationship.

Those who reported on their own transition to parenthood seemed to be more positive about the changes they saw in their sibling relationships. In many cases, they identified the relationship their sibling shared with their child as the most important aspect of their improved relationship. One sibling shared, "It made us closer," whereas another sister offered, "My brother LOVES my daughter!! He is great w/ her! He talks to her on the phone."

CHAPTER FIVE

DISCUSSION AND CONCLUSION

This research study was conducted to identify the influence of life transition statuses on the relationships siblings share in early adulthood. The sibling relationship has been overshadowed in previous research but has recently received more attention. In this project, I investigated the influence of gender and three life transitions on the intimacy and contact that siblings share.

Gender Composition of Sibling Pairs

It was predicted that sister-sister pairs would show the greatest levels of intimacy and contact. Sister-brother (sister is reporting) and brother-sister (brother is reporting) pairs were expected to show slightly lower levels of e-mail, phone, and personal contact, but high levels of intimacy. Finally, brother-brother pairs were predicted to have the lowest levels of intimacy and contact.

The gender of sibling pairs was not found to have an influence on the intimacy sibling's share in early adulthood. This was not the case for e-mail and phone contact, both of which were higher for sister-sister relationships, followed by the sister-brother, brother-sister, and then brother-brother pairs. Sister-sister pairs also reported higher levels of personal contact compared to sister-brother pairs.

Sister pairs in adulthood have been identified in previous research as having unique ties (Buist, Dekovic, Meeus, & van Aken, 2002; Connidis, 1989b; Connidis & Campbell, 1995; Lee et al., 1990). The stronger ties between sisters have been attributed to deeper communication and sharing and to women's socialization to nurture others, and to gender similarity (Bedford, 1996; Cicirelli, 1977; Connidis, 1989b; Gold, 1989b;

Pulakos, 1989). The current project affirms the importance sister-sister pairs place on contact. Further, open-ended data supports these findings. Many of the sisters indicated their relationships improved with life transitions. One sister shared that her relationship with her sister was much improved with her sister's transition to parenthood, stating: "she matured and we grew closer as a result." Another sister shared that, when her sister moved in with her boyfriend, it increased their interaction. She shared:

When she began cohabiting it was cool to have a kinda like a brother because I never had one, so it made her and I become closer because I liked to spend more time with her and him.

It is difficult to identify why sister-sister pairs had the greatest levels of phone contact, e-mail contact, and personal contact, but not greater intimacy in this project. It is possible that intimacy is something that remains strong across all gender pairs and is not influenced in the way that phone, e-mail, and personal contact are. Siblings may have reduced amounts of contact on the basis of gender composition, but may still perceive the intimacy in their relationship as strong. Previous findings support the idea that brother-brother pairs have less contact and emotional investment (Bank & Kahn, 1982; Burholt & Wenger, 1998; Connidis & Campbell, 1995). Brother-brother pairs may not maintain the same level of contact as sisters but they do maintain a consistent level of intimacy.

The open-ended questions for this project were not directed at gender pairs, but responses provided a window into the perceived intimacy shared by brother-brother pairs. One brother shared his feelings about the transition away from home as not a big deal, stating the transition "Didn't bother me, we're brothers. It's a guy thing." Another brother offered that the transition away from home "Did not effect the bond between us, but did definitely affect the amount of time spent visiting/conversing." Perhaps the gender

similarity argument used in previous sister-sister research applies here, or it may just be that brothers utilize personal and phone contact less the sister-sister pairs do.

Co-residential Status of Sibling Pairs

It was predicted that pairs in which siblings coresided, either with parents or with one another, would have the greatest levels of personal contact, e-mail contact, phone contact, and intimacy overall. It was further hypothesized that those living together would have high levels of contact and intimacy because of the increased level of interaction associated with coresidence, whereas contact and intimacy between siblings who live apart was difficult to predict.

Pairs in which both siblings lived outside their parents' home but did not coreside were expected to have higher levels of intimacy but lower levels of personal contact than coresiders. Even with a reduction in personal contact, e-mail and phone contact was expected to remain frequent for those living apart outside of their parent's home but not as frequent as that of siblings who coreside. Sibling pairs with mixed living arrangements, such as participants living on their own, siblings living with parent, and participants living with parent while siblings lived on their own were expected to have the least amount of personal contact, but e-mail and phone contact were expected to remain frequent. Intimacy was expected to be lower for mixed pairs, but no less than for those who lived apart and outside of their parent's home.

Results showed that coresidential status had little to no effect on the intimacy that siblings shared, indicating that intimacy did not appear to be influenced by the transition away from home for siblings. The findings for e-mail contact were consistent with those

for intimacy, as the coresidential status of participants seemed to have little to no effect on the e-mail contact of siblings.

Coresidential status of siblings did seem to influence phone contact. Those participants who lived away from home and whose siblings lived with parents were the only group that showed greater influence on sibling phone contact when compared to those that coreside away from home. It is possible that parents play a part in keeping siblings in touch? Or that keeping in touch with parents brings one in greater contact with siblings? Previous literature has indicated that the move away from a sibling may enhance the sibling relationship, especially if siblings are close in age and experiencing similar life events (Meinhold, 2003; Newman, 1991; Weaver, Coleman, & Ganong, 2003). It was further predicted that those siblings who lived together would have high levels of phone contact, and this was supported.

Open-ended data offered a similar explanation of the effects of phone contact between siblings. A handful of participants offered strategies they developed to maintain their relationships after the transition because of the loss of personal contact. In many cases, phone and e-mail contact was utilized to make up for the loss of personal contact.

One sister shared:

When I moved to another city to go to college, my brother and I didn't see each other everyday, only on holidays and at family gatherings. I think that he and I are very excited to see each other when we do as a result of this separation. It is nice to talk to him on the phone, but sometimes one-sided since he is 6 years younger than me. We always say that we love one another though before hanging up the phone and we always hug upon greeting or when saying goodbye.

Open-ended responses offered both an alternate view and further explanation of the transition out of the parental home. The majority of responses (42.1% and 37.2%) indicated that moving away for both participants and their sibling had positive affects on

the relationship. Two sisters shared statements about their developing relationships with their brothers and how the transition away from home and their time apart was beneficial:

The time we were around each other was decreased, so the time we did spend together was more likely to represent our 'best behavior.' He grew up a lot and continues to do so. As a result our interactions are less fettered by petty annoyances.

and

I really look forward to spending time with him now. Before, he sometimes drove me nuts, but now since I don't see him very often, it doesn't bother me as much. I think we are a little bit closer because of my moving away.

Even with a large number of positive responses, 20% of participants shared mixed feelings about the transition. These mixed feelings help to further explain the lack of results for intimacy with this transition. Participants who shared both positive and negative feelings suggest that those positive and negative outcomes could average out in quantitative findings to show no influence.

Participants reported the negatives associated with the transition were issues of contact, personal, by phone, and by e-mail. These findings offer support for a lack of findings for intimacy, indicating that contact may decline but there is still an overall sense of intimacy between siblings. Participants who shared both a positive and negative influence on the sibling relationship with this transition, offered a window into the feelings and actions associated with the transition out of the parental home.

One sister perceived that the move her brother made affected their personal contact, but was beneficial as they utilized other forms of contact.

My brother just moved to Hawaii and out of the same town as me a little over a month ago. Since he has been gone it has been difficult not having him around, but we have gained a closer relationship over phone and e-mail.

One sister reflected on the changes in the sibling relationship and her feelings about her brother's move,

We were not as close for the first year he was gone. Although, when we did talk or see each other our relationship was much more mature, we got along better and had more in common.

Personal contact between siblings was also influenced by coresidential status and was consistent with predictions. Siblings who lived together outside of their parent's home had the greatest levels of personal contact, perhaps by definition. Further, participants who lived apart and outside the parental home had the lowest levels of contact, followed by participants who lived with parents but whose siblings lived away. These findings are consistent with those in the literature (Meinhold, 2003; Newman, 1991; Weaver, Coleman, & Ganong, 2003).

Although the majority of open-ended responses were positive, there were some who felt the transition away from home was difficult and had left one or both siblings upset with the change. One brother shared:

We became much more distant. He thinks I don't care about him anymore. I am not there on a daily basis to give my advice and help him through his problems. He has turned to his friends and is very resentful to me.

Open-ended responses were not always reflective of the quantitative findings. One sister indicated the transition away from home was not only difficult, it was also complicated by other developmental transitions for both her and her sibling:

We grew apart. Didn't see or talk to each other as much as we used to. I think she felt as if I was abandoning her. Within the same month that I moved away she started her junior year of high school at a new school, her first boyfriend had just broken up with her and there were some major changes going on at our church that also affected her. I think overall I just left at a bad time for her, and that had to contribute to the way she reacted to my leaving.

The life course perspective emphasizes the importance of age differences and life transitions on the sibling relationship (Bengtson & Allen, 1993). If a sibling is significantly younger or older, the transitions away from home may not carry the same significance as they do for those closer in age. In the case of a sister who is going away to college with an only sibling who is three years old, the transition may have little influence on the relationship. But if the sibling is only two years younger and the two spent a substantial amount of time together, the transition could influence the relationship in a significant way. This influence is seen in the quantitative findings, in that as the age difference is greater, there is less e-mail contact.

Intimate Relationship Status of Sibling Pairs

It was predicted that intimacy and contact would be the highest in pairs in which both siblings were unmarried. Sibling pairs with one unmarried sibling were expected to have lower levels of contact compared to those in the unmarried-unmarried pair. Intimacy levels for mixed pairs were expected to be high, slightly lower than that of the unmarried pair. Pairs that included two married siblings were expected to experience the lowest levels of contact and intimacy.

Intimate relationship status was found to have little to no influence on the intimacy siblings shared. The intimate relationship status of siblings also showed little to no influence on phone contact between siblings, in that phone contact did not increase or decrease with the transition to an intimate partnership. As predicted, e-mail contact was greatest for single siblings compared to married siblings and pairs in which one sibling was married and the other was single. Pairs in which the participant was married and their sibling was single reported the lowest levels of e-mail contact.

The quantitative findings do not fully support the literature suggesting that marriage and cohabitation have a negative influence on some aspects of the sibling relationship (Campbell et al., 1999; Cicirelli, 1985; Ross & Milgram, 1982; White, 2001). In her study on adult sibling contact and helping behaviors, White (2001) identified a reduction in sibling contact after marriage. These findings are also seen in Connidis's (1989) work; she identified the greatest levels of contact between single siblings, those who had not yet made the transition into intimate partnerships or marriage.

Siblings who indicated intimate relationship status as having little influence on phone contact and intimacy, may be maintaining a consistent level of phone contact and intimacy before and after the transition. In open-ended responses, many participants shared that their relationships were positively influenced when their sibling entered an intimate partnership or when they themselves entered a partnership. One sister identified not only an improved relationship with her brother, but a developing relationship with her brother's girlfriend as well:

When my brother began cohabiting, he started to really mature into a man. I think it was a good move for him because a girlfriend has tremendously helped him to settle down & grow up. I also feel that I have now gained another sibling (his girlfriend) because we have grown into a sister relationship together.

These comments support some of the previous literature, which indicates intimate partnerships can strengthen the ties that siblings share (Connidis, 1992; Ross, 1981; Ross & Milgram, 1982). Some siblings may find that the addition of a brother-in-law or sister-in-law strengthens their sibling relationship. If the new partner or spouse shares aspects of social location (race, ethnicity, and SES) and fits with family beliefs, the relationship sibling's share have even greater potential for growth (Bengtson & Allen, 1993).

Other participants shared a mix of positive and negative responses, ranging from “We definitely became closer,” to “It made her upset that I wasn’t available all the time anymore.” Open-ended questions associated with the transition to intimate partnership produced a large number of neutral responses. One participant shared: “Cohabiting has not really affected my relationship with my sibling.” Another brother shared: “My getting married didn’t affect my relationship with my sibling. Whenever we get together, it’s just with our spouses and its fun. We’re still the same closeness.”

Intimate relationship status was associated with a change in e-mail contact. As predicted, siblings who were single had greater e-mail contact than siblings who were married, or than those pairs in which one sibling was single and the other was married. Perhaps single siblings have greater amounts of time to commit to maintaining contact via e-mail. Connidis (1989) showed contact to be the most frequent between single siblings. Consistent with the life course perspective, siblings who reported fewer competing relationships tended to maintain the greatest levels of contact with each other (Burholt & Wenger, 1998; Campbell et al., 1999; Connidis, 1992; Connidis & Campbell, 1995).

It is also possible that the age and geographic mobility of the sample influenced these quantitative findings. E-mail contact appears to be a universal form of communication for this early adulthood population and a cheaper mode of contact compared to personal visits, especially if siblings live at a distance. Those living on college campuses (83% of the sample) have access to the Internet in computer labs, offices, classrooms, and at home. Most universities provide their students with e-mail accounts. The common generational experience of the Internet and e-mail as common

modes of communication is shared by the age group identified in this study, increasing the likelihood that participants utilize and rely on e-mail as a form of communication with their siblings. As the majority of the sample was drawn from university populations, this likely increased those who may have access to Internet and e-mail. Finally, open-ended responses were shared with the transition to cohabiting and marriage and there were also a greater number of neutral responses expressed compared to previous questions. This is potentially because of the age of the participants, as many have not experienced the transition to intimate partnership or marriage for themselves or their sibling.

Parental Status of Sibling Pairs

Childless siblings were predicted to have greater levels of contact and higher intimacy than those with children. Pairs in which only one sibling had a child were expected to have relatively less contact but levels of intimacy similar to childless pairs. Pairs including two parents were expected to have the lowest levels of contact and intimacy. Results indicated that e-mail contact was not significantly influenced by the parental status of sibling pairs, but the parental status of sibling pairs was significantly associated with intimacy between siblings in early adulthood. Childless sibling pairs shared the highest levels of sibling intimacy, followed by pairs that included a parent sibling and a childless participant, and then by those who were both parents. Finally, compared to childless siblings, personal contact was the lowest for sibling pairs when both were parents.

These findings suggest that, as sibling's transition into parenthood, their relationship with their sibling decreases in intimacy. Siblings reported lower intimacy

with parenthood, except for pairs in which the participant was the parent and the sibling was childless. These findings suggest that participants may perceive that their own transition to parenthood has not influenced their relationship with their sibling as much as their sibling's transition to parenthood. Open-ended data offer support for this explanation as a greater number of negative responses was associated with the siblings', rather than the participants' transition to parenthood.

Findings are somewhat consistent with past research, in that the strongest ties between siblings exist when both siblings are childless (Burholt & Wenger, 1998; Campbell et al., 1999; Connidis, 1989a, 1989b; White, 2001). Ingrid Connidis (1989b, 1999) has also reported that childless siblings maintain the most active ties in adulthood when compared to other sibling pairs.

White (2001) reported that parental status has detrimental effects on contact and exchange of aid for siblings, and that childless siblings have the greatest flexibility and time to contribute to their relationships. The quantitative findings here support previous research, as contact was significantly influenced by parenthood, specifically phone and personal contact. As predicted, phone contact between siblings who were both parents was lower than that between siblings who are childless, and than pairs in which either the sibling or the participant had children. The same results were seen for personal contact, as siblings who were both parents reported lower personal contact than childless pairs, and than pairs in which either the sibling or the participant had children.

Quantitative findings were not in full agreement with previous literature that identified an increase in closeness between sisters when both shared the transition to

parenthood (Gold, 1996). Gold reported that when women participate in similar life events, sisters' relationships developed deeper meaning and intimacy.

In open-ended responses, the majority of participants reported the transition to be beneficial to their relationship. One sister shared that the transition to parenthood for her and her sibling strengthened their relationship and their phone contact, just as Gold had indicated in her 1996 study. This sister shared: "When she had her first child, I had already had my two children. I was on the phone to her giving advice, etc. It made our relationship stronger because we had something significant in common." Other participants shared this perspective: "It made us closer. We have something in common to talk about."

Childless participants echoed this theme as well, indicating that their siblings' transition to parenthood was beneficial overall to their relationship but with some negative aspects. A childless sister shared her increased involvement with her sibling:

Again, it brought us both closer and further. I became very close to her during the pregnancy. I was the first one she told about it, I went to Dr. Appointments with her and I was there when she gave birth, both times. I have also been involved in babysitting and working at the children's school. But, then again, she is very busy with them so it affects the dynamic and energy in our relationship.

In many cases, participants reported that other aspects of their lives played a part in their sibling relationship changing. Developmental transitions and family dynamics played a role in the effect of the transition to parenthood, especially if the transition was unexpected or unwelcome. This sister identified sibling rivalry as helping to reduce the quality of her sibling relationship:

I was the first one in my family to have a boy, so she again was mad at me. But she loves my kids so it didn't reflect onto him. With my parents she would talk about how I always have the good things happen to me.

A combination of factors played a role in many participants' relationships. One sister shared:

When my sister had her son, it COMPLETELY changed our relationship. It was at the same time that I moved out so we both grew up really fast. She is 23 and lives with my parents and her 2 year old son. She matured so much when she had him that it was easier to respect her. Plus, the fact that the dad wasn't in the picture made our family become really close in supporting her and her son. It has been a great experience.

The life course perspective could help to explain these findings. It is impossible to tease out just one life transition and study it's in an isolated situation. In this project, the open-ended responses provided details on the nuances associated with life transitions and the influence they have on sibling relationships. Open-ended responses further identified the importance of competing life transitions and family dynamics when studying sibling relationships over time.

Control Variables

A few of the control variables had inconsistent influence across the four regression analyses. Participant education level when significant was negatively associated with dependent variables, indicating that as education level of participants increased, there was an associated reduction in sibling contact or intimacy. When looking at sibling education level, however, the opposite was seen. As sibling education level increased, the level of intimacy or contact also increased. Why would two identical measures of education level produce opposite results?

Education level may not be an ideal predictor considering the majority of participants were in school when participating in this project. With 83% of the sample working toward a college degree, education level is not an accurate assessment of the educational status participants aspire to reach. In some cases, participants may have

perceived that their pursuit of education was not a shared goal of their sibling, hindering their contact and support in some way.

Distance from sibling, age difference, and birth order were also variables of interest in the quantitative analyses. Distance from siblings was negatively associated with intimacy and personal contact, but positively associated with e-mail contact. Age difference was only significantly associated with e-mail contact, indicating that, as the number of months in age difference between siblings increased, e-mail contact was less. Finally, birth order was significantly associated only with intimacy, indicating that, as sibling birth order increased, there also was an associated increase in sibling intimacy.

Strengths and Limitations

As with any study, there are limitations and strengths. Many of the limitations of this project resulted from limited time and resources for data collection. The data reflect the perspective of one sibling, rather than both. This data collection strategy, although limiting, provides information about the sibling relationship during key periods of the life course. Thompson and Walker (1982) noted there are three sources for appropriately measuring a dyadic relationship, one of which was used in this project. Gathering information from one individual about the sibling relationship in early adulthood is a valid way to study relationships.

Previous literature indicated that women are more active than men are as siblings and that women have greater levels of contact, support, and interaction (Cicirelli, 1977; Connidis, 1989b; Gold, 1989b; Pulakos, 1989). In the current project, men demonstrated similar levels of intimacy and personal contact as women, although e-mail and phone contact was greater for sisters than in pairs including a brother. Results for gender may be

problematic because of the high number of women (83%) participating in this project, although, equal numbers of participants reported on a brother and a sister as their target sibling. As indicated in the methods section, all four dependent variables showed differing levels of skewness, possibly limiting the results further.

The effect of life transitions is best studied using a longitudinal design. Because of the complexity and time-consuming nature of a longitudinal project, life transitions were studied here from a cross-sectional perspective. Identifying the transitional experiences of early adults at different points in their development allowed me to discover potential influences of different life transition statuses on early adult sibling relationships. Open-ended responses helped to explain the results from the quantitative analysis and to explore the contextual influences on siblings. The use of both quantitative and open-ended methods in this project enabled me to address the research questions.

Because the project sample was drawn from Portland, Oregon, and its surrounding areas (Corvallis, OR, Vancouver, WA) and two large state universities, the sample was limited across SES, education level, race, age, and ethnic diversity. A nonprobability sample was drawn that does not accurately represent the population of young adults in the United States, but that offers a look into a small population of young adults.

Purposeful sampling was utilized for this project to obtain a sample of young adults falling between the ages of 18 and 35. Gathering 85% of the sample from two large state universities limited the age of the sample further, as students who attend the two universities on average fall between the ages of 17 and 27 years old. Consistent with

life course perspective, had the age range of participants reached more broadly across the intended population, the findings for intimacy and contact might have been different.

The majority of data collection occurred within two similar programs (Child and Family Studies & Human Development and Family Sciences) at the universities. Both programs enrolled a greater number of women than men and they enrolled students who were likely to have working with children and families as a career goal, possibly making students more sympathetic to developmental and family issues. These programs were chosen because of the ease of classroom access and because of the number of students enrolled. Notably, four of the courses fulfilled university general education requirements. Thus, they offered access to a more diverse population than other core classes. The decision to choose only these two programs may have biased the sample, but it did offer an opportunity to study the sibling relationships of many early adults. An additional limitation was the homogeneity of education level within the sample. Because 85% of the sample came from a university population, there was limited variance across education level. The sample is further limited to those who had computer and Internet access, a high school diploma, or those who attended or were attending college. Those who are familiar with the internet and who utilize e-mail as a common communication tool may offer a different perspective from those who are not familiar with the internet or who do not use e-mail.

In all three phases of data collection, participation was voluntary. Those who did not have interest in the topic or who had poor sibling relationships may have been less likely to participate. Finally, the sample was highly skewed by race and ethnicity, with 87% of the sample falling into a single racial category (White). The homogeneous sample

drawn for this project, although limited by narrow age and education distributions, does offer the potential to provide new knowledge about siblings and their life transitions.

The current project used innovative strategies not yet seen in the sibling literature. The age of participants allowed me to identify an array of life transitions across early adulthood, a development period discussed little in previous literature. The use of web-based survey tools ensured access to a large number of participants in diverse geographic locations. Further, because the age of participants fell between 18 and 35, it was reasonable to assume that most, if not all, had experience related to life transitions.

With the definition of marriage and cohabitation changing rapidly in the past 15 years, it was difficult to determine the best use of marital status data (Smock, 2000). Separating partnered, cohabiting, and married participants is ideal, but because of low sample numbers, it was not an option for this project.

Two variables were inconsistent in influence across analyses. Sibling education and participant education had inconsistent influence on the sibling relationship. The inconsistent findings associated with these two variables require further investigation. It may be useful to employ a measure of SES that is more inclusive, rather than just education level.

Implications

This project demonstrated that life transitions may play a significant role in the contact and intimacy that siblings share in early adulthood. Contact and intimacy between siblings differed in some respects by the life transitions they had experienced. In some cases, sibling intimacy and contact was negatively influenced by transitions, a pattern that

was not reflected in the open-ended responses of participants. In many cases, however, open-ended data helped to explain the quantitative results.

Open-ended responses from participants not only reflected on the initial change in their relationship after a transition, but also the development of their relationship with time. This component of time was not evident in the quantitative data. The small cross-section of participants who shared their experiences with all three life transitions provided nuances that are not available in the quantitative results. Future research should pursue multiple methods of data collection and longitudinal designs.

Future research should address the sibling relationship as a source of support and well-being across the life course. Siblings share a unique tie in families, often perceived as a more parallel relationship than the parent-child relationship. Many participants shared that there was increased time and commitment offered to their sibling with the transition from home, the transition to an intimate partnership, and the transition to parenthood. The life course perspective suggests that siblings can play a supportive role in each other's lives, especially if they have experienced a transition before their sibling or if they are experiencing it together (Bengtson & Allen, 1993). Giving and receiving advice and being compassionate about struggles can have a profound influence on well-being, closeness, and contact according to open-ended responses in this project.

Studies on siblings at any stage of life should be aware of the complicating nature of other life transitions, age differences, family structure, family dynamics, and personal beliefs on the development of the sibling relationship.

Conclusion

This project provided information about the sibling relationship in relation to life transitions in early adulthood. The life course perspective suggests that sibling relationships are affected by transitions such as moving away from home, marriage, and parenthood. The current project helped to identify the influence of these life transitions on the sibling relationship.

The sibling relationship is a unique and life-long relationship. At any developmental stage, the sibling relationship has the potential to develop and thrive. Siblings can offer support, love, advice, friendship, memories, and much, much more. When individuals transition into adulthood, they are faced with a growing number of responsibilities related to families, careers, social life, kin, paid work, and so on. Early adulthood presents a number of developmental challenges, and these challenges also may challenge the sibling tie.

Directing questions toward those who have been successful and resilient in their sibling relationships through adulthood can help researchers and practitioners offer supports and strategies to siblings working through difficult transitions. We can also work to further develop measurement tools and methods that allow for a deeper, more contextual investigation of a relationship that persists across time.

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APPENDICES

Appendix A

Phone Script for Initial Contact with Reunion Organizers

Hello, my name is Jana Meinhold and I'm a graduate student at Oregon State University. I am in the process of recruiting participants for a research project on the relationships between brothers and sisters in early adulthood. I have contacted you in the hope that you and other members of the graduating class of _____ from _____ high school will be interested in participating in this research project.

The project looks at contact and closeness among siblings and at how life experiences such as getting married or having a child influence that relationship. I'm looking for individuals who graduated from high schools in the Portland area and will soon have their 5th-, 10th-, or 15th-year class reunion. To make the process as simple as possible, I have created a survey on the Internet that takes only 10 to 15 minutes to complete and that can be completed anonymously.

If you agree to help with this project, you will receive information about the project including its timeline and goals. What I need from you are the e-mail addresses of your classmates. Either you or I will send an email to these addresses; the e-mail contains a web address for the on-line survey and information about the project. In return for agreeing to help with this project, I will include three agreed-upon questions specific to your class reunion on the web survey.

When the research project ends, all e-mail addresses I receive from you will be erased from my computer. They will not be used for any other purpose. All aspects of this research project have been approved by the Oregon State University Institutional Review Board, an organization whose purpose is to protect the rights of people participating in research projects such as this one.

I would appreciate your support in completing the research project required for my doctoral degree. If interested or if you have questions, please reply to this e-mail or call me at (541) 737-1314 and I will send additional project information.

I hope to hear from you soon,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development and Family Studies
jana_meinhold@hotmail.com

Appendix B

Project Information Packet

Date

Coordinator/Committee Chair

Class of _____ High School Reunion

Address

Portland, OR 99754

Dear _____,

My name is Jana Meinhold and I am a doctoral Candidate in Human Development and Family Sciences at Oregon State University. At your request, I am writing to provide further information on an exciting project for your graduating class.

As I mentioned in my phone/e-mail correspondence with you, I am conducting a research project on sibling relationships in early adulthood. I am contacting classes planning their 5th-, 10th-, and 15th-year class reunions in the Portland, Oregon area to participate. This project is required to complete my doctoral degree. I will ask alums between the ages of 18 and 35 about their relationships with a brother or sister. The project will allow me to examine the influence of life transitions such as marriage and parenthood on relationships with siblings.

Here's what would be involved if you granted permission for your class to participate in this project. In the next few weeks, via an e-mail message, I would provide all members of your graduating class with access to a web site that has a short questionnaire about sibling relationships. The web site home page provides participants with further information about the project (URL here). The survey takes 10 to 15 minutes to complete. It has questions about participants, their families, and their sibling relationships. In return for your help, you will have the option to choose from a series of questions to ask your class members about their upcoming class reunion on the web survey. Toward the end of data collection, an e-mail message will be sent to remind alums to please participate. All email addresses and information about your class reunion will be removed from my computer at the completion of the project to ensure alumni privacy.

This study has received approval from Oregon State University's Institutional Review Board (IRB). The IRB is a review board that is in place to protect the rights of individuals participating in research. The Board has reviewed and approved all aspects of this project. I have attached a copy of the sibling questionnaire I will be using, as well as additional information about the project. The information gained from this project will help to explain the effect of life transitions on the contact and intimacy between young adults and their siblings.

Thank you for taking the time to learn more about this project. I will be contacting you in a few days to answer any questions that you might have, and to find out whether your class will participate. In the meantime, if you have any questions, please feel free to contact my supervisors (Dr. Alexis Walker, 541-737-1083 or Dr. Alan Acock, 541-737-1077) or me by phone (541) 737-1314 or via e-mail at jana_meinhold@hotmail.com.

Thank you again, and I hope that you are excited about participating. I am eager to work with you.

Sincerely,

Jana L. Meinhold, Ph.D. Candidate
Oregon State University
Department of Human Development and Family Studies
322 Milam Hall
Corvallis, OR 97331

The Influence of Life Transitions on Sibling Intimacy and
Contact in Early Adulthood

Specific Aims of the Sibling Research Project:

1. To investigate the effect of gender and life transitions such as moving away from home, getting married, and having a child on sibling relationships in early adulthood.
2. To identify and interpret sibling intimacy and contact.
3. To gather information on the sibling relationship in early adulthood from individuals living in a large city in the U.S. and compare that information to previous research on this subject.

What's Involved:

-A 10 to 15 minute survey that asks individuals about their relationship with siblings and their family background. This survey can be completed on-line anywhere Internet access is available.

What I need from you:

-E-mail addresses of all available class members and permission to distribute e-mail message to members of your graduating class.

Benefits to the Class and Class Members:

- The opportunity to help others learn about sibling relationships in early adulthood. This is also a chance for individuals to let their views be heard about family relationships.
- The ability to place questions concerning your class reunion on the web survey. All of the responses and information provided by class members will be given to the planning committee at the completion of data collection.
- A summary of findings will be provided to reunion organizers upon request.

Appendix C

Form E-mail for Organizers to Send Before URL E-mail

Hello _____ High's class of _____,

Our graduating class has been randomly selected to participate in a graduate student's research project at Oregon State University. The project focuses on how life experiences such as getting married or having a child influence relationships between brothers and sisters.

You will be receiving an additional e-mail from Jana Meinhold or myself in the next few days with information about the project and your participation. Jana has created a survey on the Internet that takes only 10 to 15 minutes to complete. The e-mail you receive from Jana will contain a URL address to link you to the survey. You will be asked about your sibling relationships. Also there is a series of questions related to our class reunion this spring/summer.

Please help Jana with this required research project and help the reunion committee too by completing the Internet survey. If you would like more information or if you have questions, please contact Jana Meinhold (by phone 541-737-1314, or e-mail jana_meinhold@hotmail.com) or her supervisors Dr. Alan Acock (541-737-1077) or Dr. Alexis Walker (541-737-1083).

Thanks,

Name of Committee Member

Appendix D

Form E-mail to Participants with URL for Survey

Hello _____ High School graduating class of _____. My name is Jana Meinhold and I am a graduate student at Oregon State University in the process of completing my doctoral degree. I have been in contact with your fellow classmate and reunion organizer, _____, about your upcoming reunion. In return for gathering information from members of your class, your reunion committee gave me your e-mail address (and those of your classmates).

At the bottom of this e-mail, I have included an Internet link that will take you to an on-line survey that asks a series of questions about you and your sisters or brothers. As you can tell, I am studying the relationship between siblings in early adulthood. I'm interested in how the relationship is influenced by life experiences such as moving away from home, getting married, or having a child.

My ability to learn about this subject depends on responses from people like you! It will take only 10 to 15 minutes to answer the questions and I would greatly appreciate your time. Your participation will help us to learn about relationships between brothers and sister during a very important period in adult life. Toward the end of the survey you will find questions about your up-coming class reunion.

If you do not have a biological sibling, I encourage you to follow the link to complete the questions specific to your class reunion this spring/summer. As noted above, I will give this information to your reunion committee.

Thank you for your help. If you have any questions about this project, more information is available on the web site, or you are more than welcome to contact me at my personal email address, jana_meinhold@hotmail.com.

To participate in this project please use the following link:

<http://www.surveymonkey.com/s.asp?u=25564512193>

Thank you for your time and your help,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development & Family Studies

Appendix E

Participant Reminder E-mail

_____ High's Class of _____,

A few weeks ago, I sent you and your _____ classmates an e-mail containing an Internet address for an on-line survey about sibling relationships. Please disregard this e-mail if you have completed the web survey, and thanks so much.

If you have not yet had the time to complete the survey, there is still time to do so. I would like very much to include your experiences in my research project. I have included the Internet address below for your convenience.

Sibling survey web address: <http://>

This will be my final correspondence about the project. Your e-mail information will now be erased from my computer. Please feel free to contact my supervisors (Dr. Alan Acock 541-737-1077 or Dr. Alexis Walker 541-737-1083) or me if you have questions (phone: 541-737-1314 e-mail: jana_meinhold@hotmail.com).

Thank you for your support,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development & Family Science

Appendix F

Script for Initial Phone or E-mail Contact with Instructors

Hello, my name is Jana Meinhold and I am in the process of recruiting participants for my dissertation research project on the relationships between brothers and sisters in early adulthood. I have contacted you in the hope that you will be interested in helping me recruit students to participate in this research project.

The project looks at contact and closeness among siblings and at how life experiences such as getting married or having a child influence that relationship. To make the process as simple as possible, I have created a survey on the Internet that takes only 10 to 15 minutes to complete and that can be completed anonymously.

If you agree to help with this project, you will receive information about the project including its timeline and goals. What I need is for you to send a series of three e-mails containing a web address for the on-line survey and information about the project. All aspects of this research project have been approved by the Oregon State University Institutional Review Board, an organization whose purpose is to protect the rights of people participating in research projects such as this one.

I would appreciate your support in completing the research project required for my doctoral degree. If interested or if you have questions, please reply to this e-mail or call me at (503) 725-8562 and I will send additional project information.

I hope to hear from you soon,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development and Family Studies
jana_meinhold@hotmail.com

Appendix G

First Informational E-mail for Instructors to Send to Students

Hello Students of _____,

We have been selected to participate in a graduate student's research project at Oregon State University. The project focuses on how life experiences such as getting married or having a child influence relationships between brothers and sisters.

You will be receiving two more e-mails in the next few weeks with information about the project and your participation. Jana has created a survey on the Internet that takes only 10 to 15 minutes to complete. The next e-mail you receive will contain a URL address to link you to the survey. You will be asked about your relationship with one of your siblings. Your participation, or not, is voluntary and will have no affect on your grade, your relationship with your instructor, or your relationship with the researchers.

Please help Jana with this required research project. If you would like more information or if you have questions, please contact Jana Meinhold (by phone 503-725-8562, or e-mail jana_meinhold@hotmail.com) or her supervisors Dr. Alan Acock (541-737-1077) or Dr. Alexis Walker (541-737-1083).

Thanks,

Name of Instructor

Appendix H

Form E-mail to Students with URL for Survey

Hello students of _____. My name is Jana Meinhold and I am a graduate student at Oregon State University in the process of completing my doctoral degree. I have been in contact with your instructor/professor about your potential participation in a research project.

At the bottom of this e-mail, I have included an Internet link that will take you to an on-line survey that asks a series of questions about you and one of your sisters or brothers. As you can tell, I am studying the relationship between siblings in early adulthood. I'm interested in how the relationship is influenced by life experiences such as moving away from home, getting married, or having a child.

My ability to learn about this subject depends on responses from people like you! It will take only 10 to 15 minutes to answer the questions and I would greatly appreciate your time. Your participation will help us to learn about relationships between brothers and sister during a very important period in adult life. Your participation, or not, is voluntary and will have no affect on your grade, your relationship with your instructor, or your relationship with the researchers.

If you do not have a biological sibling, this survey unfortunately does not apply to you. Thanks anyway and I appreciate your support.

Thank you for your help. If you have any questions about this project, more information is available on the survey web site, or you are more than welcome to contact me at my personal email address, jana_meinhold@hotmail.com.

To participate in this project please use the following link:

Thank you for your time and your help,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development & Family Studies

Appendix I

Participant Reminder and Final E-mail

Students of _____,

A few weeks ago, I sent you and your _____ classmates an e-mail containing an Internet address for an on-line survey about sibling relationships. Please disregard this e-mail if you have completed the web survey, and thanks so much.

If you have not yet had the time to complete the survey, there is still time to do so. I would like very much to include your experiences in my research project. I have included the Internet address below for your convenience. Remember, your participation, or not, is voluntary and will have no affect on your grade, your relationship with your instructor, or your relationship with the researchers.

Sibling survey web address: <http://>

This will be my final correspondence about the project. Your e-mail information will now be erased from my computer. Please feel free to contact my supervisors (Dr. Alan Acock 541-737-1077 or Dr. Alexis Walker 541-737-1083) or me if you have questions (phone: 503-725-8562 e-mail: jana_meinhold@hotmail.com).

Thank you for your support,

Jana Meinhold, PhD Candidate
Oregon State University
Department of Human Development & Family Sciences

Appendix J

Informed Consent Documents

DEPARTMENT OF
Human Development and
Family Sciences



OREGON
STATE
UNIVERSITY

322 Milam Hall
Corvallis, Oregon
97331

Telephone
541-737-4992

FAX
541-737-1076

Informed Consent Document

The Influence of Life Transition Statuses on Sibling Intimacy and Contact in Early Adulthood

Principal Investigators: Dr. Alexis Walker and Dr. Alan Acock
Lead Student Researcher: Jana L. Meinhold, PhD Candidate

Purpose of the Project: This project is designed to identify the influence of life transitions on the sibling relationship in early adulthood. More specifically, we are interested in how intimacy and contact between siblings is influenced by the transition to marriage, the transition to parenthood, and the transition out of the parental home. The results of this project will be used to fulfill the final requirement for the lead student researcher's doctoral degree. In addition, a series of research publications and conference presentations will be produced.

Procedures: If you choose to participate in this study you will be asked to complete a 24-item web-based questionnaire asking questions concerning your family, your brother or sister, and yourself. The questionnaire will take 10 to 15 minutes to complete, and will be available to you on the Internet. The information you provide on the survey will be anonymous, meaning your responses will not be linked to you in any way. Access to data will be restricted to Dr. Alexis Walker, Dr. Alan Acock, and Jana L. Meinhold. All data will be kept in a locked cabinet.

Risks of the Study: This study's risks include possible emotional difficulties when completing the sibling portion of the questionnaire and difficulties sharing personal family information. Risks will be minimized in two ways: 1) you will be assured that anonymity of responses will be maintained, and 2) you will be given the opportunity to complete the survey in privacy and in a location of your choosing.

Benefits of the Study: The results of this study will be used to better understand how the sibling relationship is influenced by life transitions in early adulthood. The benefits include the opportunity to reflect on your own life transitions and the transitions of your sister or brother. You may appreciate the attention paid to sibling relationship transitions in your family, and find the survey and project to be exciting. Finally, in some cases you will have the opportunity to learn about fellow classmates through participation in class specific questions on the survey.

OSU IRB Approval Date: 05-11-04
Approval Expiration Date: 05-10-05

Compensation: Participation in this project will be on a volunteer basis. You will also be given the opportunity to obtain a copy of research papers or research results upon completion of the research project in the fall of 2004 by contacting the student researcher (jana_meinhold@hotmail.com).

Confidentiality: Your questionnaire responses will not have your name on it and that your information will remain anonymous. Neither your name nor any information from which you might be identified will be used in any summaries of the data or in publication. Any information obtained in connection with this study that can be identified with you will be kept confidential to the extent permitted by law. Do not share the Internet address for the web-survey with anyone outside of your fellow graduating class members.

Voluntary Participation: Your participation in this study is completely voluntary. You may decline to answer any question you choose and that you may withdraw from the study at any time.

Questions: Any questions you have about the research study or specific procedures should be directed to Jana L. Meinhold (jana_meinhold@hotmail.com) at (541) 737-1314, Alan Acock (alan.acock@oregonstate.edu) at (541) 737-1077 or Alexis Walker (walkera@oregonstate.edu) at (541) 737-1083. If you have questions about your rights as a research participant you should contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator at (541) 737-3437 or IRB@oregonstate.edu.

Thank you for your time! We appreciate your help with this project and the important information that you will provide!!!

By clicking the “yes” button on the bottom of this page, you are indicating that you have read and understand the information described above and that you are giving your consent to participate in this study. Please print a copy of this consent form for your future reference.

____ Yes, I agree to participate in this project.

DEPARTMENT OF
Human Development and
Family Sciences

May, 2004



OREGON
STATE
UNIVERSITY

322 Milam Hall
Corvallis, Oregon
97331

Telephone
541-737-4992

FAX
541-737-1076

Hello _____ High Schools class of _____
graduates,

My name is Jana Meinhold and I am a graduate student at Oregon State University in the process of completing my doctoral degree. I have been in contact with your fellow classmate and reunion organizer, _____, about your upcoming reunion.

Your graduating class has been randomly selected to participate in a research project with Oregon State University. This project is designed to identify the influence of life transitions on the sibling relationship in early adulthood. More specifically, I am interested in how intimacy and contact between siblings is influenced by the transition to marriage, the transition to parenthood, and the transition out of the parental home. The results of this project will be used to fulfill the final requirement for my doctoral degree. In addition, a series of research publications and conference presentations will be produced.

If you choose to participate in this study you will be asked to complete a 24-item web-based questionnaire asking questions concerning your family, your brother or sister, and yourself. The questionnaire will take 10 to 15 minutes to complete, and will be available to you on the Internet. The information you provide on the survey will be anonymous, meaning your responses will not be linked to you in any way. Access to data will be restricted to Dr. Alexis Walker, Dr. Alan Acock, and Jana L. Meinhold. All data will be kept in a locked cabinet.

This study's risks include possible emotional difficulties when completing the sibling portion of the questionnaire and difficulties sharing personal family information. Risks will be minimized in two ways: 1) you will be assured that anonymity of responses will be maintained, and 2) you will be given the opportunity to complete the survey in privacy and in a location of your choosing.

The results of this study will be used to better understand how the sibling relationship is influenced by life transitions in early adulthood. The benefits include the opportunity to reflect on your own life transitions and the transitions of your sister or

OSU IRB Approval Date: 05-11-04
Approval Expiration Date: 05-10-05

brother. You may appreciate the attention paid to sibling relationship transitions in your family, and find the survey and project to be exciting. Finally, in some cases you will have the opportunity to learn about fellow classmates through participation in class specific questions on the survey.

Participation in this project will be on a volunteer basis. You will also be given the opportunity to obtain a copy of research papers or research results upon completion of the research project in the fall of 2004 by contacting the student researcher (jana_meinhold@hotmail.com).

Your questionnaire responses will not have your name on it and that your information will remain anonymous. Neither your name nor any information from which you might be identified will be used in any summaries of the data or in publication. Any information obtained in connection with this study that can be identified with you will be kept confidential to the extent permitted by law. Do not share the Internet address for the web-survey with anyone outside of your fellow graduating class members.

Your participation in this study is completely voluntary. You may decline to answer any question you choose and that you may withdraw from the study at any time.

Questions: Any questions you have about the research study or specific procedures should be directed to Jana L. Meinhold (jana_meinhold@hotmail.com) at (541) 737-1314, Alan Acock (alan.acock@oregonstate.edu) at (541) 737-1077 or Alexis Walker (walkera@oregonstate.edu) at (541) 737-1083. If you have questions about your rights as a research participant you should contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator at (541) 737-3437 or IRB@oregonstate.edu.

Thank you for your time! I appreciate your help with this project and the important information that you will provide!!!

Jana L. Meinhold, PhD Candidate
Human Development and Family Sciences
Oregon State University

Appendix K

The Sibling Relationship in Early Adulthood Survey – Version One**-THE SIBLING RELATIONSHIP IN EARLY ADULTHOOD-**

The following questions are to help me get better acquainted with you!

1. Gender: Male Female

2. What is your date of birth? MM/DD/YYYY

3. Race/ethnicity (**please check one**):

Hispanic or Latino

Black or African American

Asian

Native Hawaiian or other Pacific Islander

White (non-Hispanic)

American Indian or Alaskan Native

Other

4. How much schooling have you completed? Check **only** the highest level completed or degree received. If currently enrolled in school, check the level of the last grade completed or the highest degree received.

Some high school but no degree

High school graduate or GED

Some college but no degree

Associate's degree (academic or occupational)

Bachelor's degree

Master's degree

Professional or Doctoral degree

5. What is your current marital or intimate relationship status? (**check only one**)

Married

Remarried

- Cohabiting
 Never Married
 Divorced or Separated
 Widowed
 Other (please specify _____)

6. If you are married or you cohabit, how did getting married or moving in with your partner affect your relationship with this sibling?

7. How many biological, adopted, or stepchildren do you have, if any? Please write the number of each in the space provided.

- Biological
 Step (your child by marriage)
 Adopted (your child by legal adoption)

8. If you have a biological child, how did becoming a parent affect your relationship with this sibling?

9. How many living sisters and brothers do you have in your family (this includes all your full, half, adopted, and step brothers and sisters)? Please indicate how many of each (example: Full 5), if none place a 0 in the space provided.

- Full (biological-same mother and father)
 Half (one parent is the same)
 Step (siblings by marriage)
 Adopted (siblings by legal adoption)

10. Where do you fall in birth order with your full biological sibling(s)?

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> 1 st | <input type="checkbox"/> 4 th | <input type="checkbox"/> 7 th | <input type="checkbox"/> 10 th or more |
| <input type="checkbox"/> 2 nd | <input type="checkbox"/> 5 th | <input type="checkbox"/> 8 th | |
| <input type="checkbox"/> 3 rd | <input type="checkbox"/> 6 th | <input type="checkbox"/> 9 th | |

11. Of the full-siblings indicated in question 9, which one is 18 and older and will celebrate a birthday next (including today)? Please write this sibling's date of birth. ___/___/___

Please answer the following questions to the best of your knowledge for the sibling (your brother or sister) that you indicated on question 11.

12. What is this sibling's gender: ___ Male ___ Female

13. Do you still live with your parents? ___ Yes ___ No

14. Does this sibling live with your parents at least half the year or more?
___ Yes ___ No

15. Do you and this sibling live together? ___ Yes ___ No

16. If you wanted to visit this sibling, how many miles would you need to drive to reach the place he or she lives?

Number Miles _____

17. If you no longer share a residence with this sibling, how did your moving away affect your relationship?

18. If you no longer share a residence with this sibling, how did his or her moving away affect your relationship?

19. Where does this sibling fall in birth order with your full sibling(s)?

___ 1 st	___ 4 th	___ 7 th	___ 10 th or more
___ 2 nd	___ 5 th	___ 8 th	
___ 3 rd	___ 6 th	___ 9 th	

20. How much schooling has this sibling completed? Check **only** the highest level completed or degree received. If your sibling is currently enrolled in school, check the level of the last grade completed or the highest degree received. If you are unsure of the exact answer, mark the level you think is most accurate.

- Some high school but no degree
- High school graduate or GED
- Some college but no degree
- Associate degree (academic or occupational)
- Bachelor's degree
- Master's degree
- Professional or Doctoral Degree

21. What is this sibling's current relationship status? (**check only one**)

- Married
- Remarried
- Cohabiting
- Never Married
- Divorced or Separated
- Widowed
- Other (please specify _____)

22. If your sibling is married or cohabits, how did his or her getting married or starting to cohabit affect your relationship?

23. How many biological, adopted, or stepchildren does this sibling have, if any? Please write the number of each in the space provided.

- Biological
- Step (child by marriage)
- Adopted (child by legal adoption)

24. If your sibling has a biological child, how did his or her becoming a parent affect your relationship?

25. Please use the nine-point scale below to answer the following questions. Place an **X** in box that best describes the contact you have with your sibling.

- 1 = Never
- 2 = Once a year
- 3 = Several times a year
- 4 = Once a month
- 5 = Several times a month
- 6 = Once a week
- 7 = Several times a week
- 8 = Once a day
- 9 = Several times a day

	1	2	3	4	5	6	7	8	9
a. How often do you and your sibling talk to each other on either a cell phone or telephone?									
b. How often do you and your sibling e-mail each other?									
d. How often do you and your sibling visit each other in person?									

26. Please use the five-point scale below to answer the following questions. Place an **X** in box that best reflects how positive or negative you feel when interacting with this sibling.

- 1 = Mostly negative
- 2 = Somewhat negative
- 3 = Have mixed feelings, both negative and positive
- 4 = Somewhat positive
- 5 = Mostly positive

	1	2	3	4	5
a. When phoning one another, you typically feel...					
b. When e-mailing one another, you typically feel...					
c. When visiting one another, you typically feel...					

27. Please indicate your perception of your relationship with the sibling whose birthday is next using the following seven-point scale. Place an X in box that most reflects your relationship.

- 1 = Never
- 2 = Rarely
- 3 = Sometimes
- 4 = Often
- 5 = Almost always
- 6 = Always

	1	2	3	4	5	6
We want to spend time together.						
This sibling shows that she or he loves me.						
We're honest with each other.						
We can accept each other's criticisms of our faults and mistakes.						
We like each other.						
We respect each other.						
Our lives are better because of each other.						
We enjoy the relationship.						
This sibling cares about the way I feel.						
We feel like we are a unit.						
There's a great amount of unselfishness in our relationship.						
This sibling always thinks of my best interest.						
I'm lucky to have this sibling in my life.						
This sibling always makes me feel better.						
This sibling is important to me.						
We love each other.						
I'm sure of this relationship.						

Thank you for completing this questionnaire! Your answers are appreciated and will be kept private and used only for this project.

4. Please use the five-point scale below to answer the following questions. Place an X in box that best reflects how positive or negative you feel when interacting with this sibling.

- 1 = Mostly negative
- 2 = Somewhat negative
- 3 = Have mixed feelings, both negative and positive
- 4 = Somewhat positive
- 5 = Mostly positive

	1	2	3	4	5
a. When phoning one another, you typically feel...					
b. When e-mailing one another, you typically feel...					
c. When visiting one another, you typically feel...					

5. Please indicate your perception of your relationship with the sibling whose birthday is next using the following seven-point scale. Place an X in box that most reflects your relationship.

- 1 = Never
- 2 = Rarely
- 3 = Sometimes
- 4 = Often
- 5 = Almost always
- 6 = Always

	1	2	3	4	5	6
We want to spend time together.						
This sibling shows that she or he loves me.						
We're honest with each other.						
We can accept each other's criticisms of our faults and mistakes.						
We like each other.						
We respect each other.						
Our lives are better because of each other.						
We enjoy the relationship.						
This sibling cares about the way I feel.						
We feel like we are a unit.						
There's a great amount of unselfishness in our relationship.						
This sibling always thinks of my best interest.						
I'm lucky to have this sibling in my life.						

This sibling always makes me feel better.						
This sibling is important to me.						
We love each other.						
I'm sure of this relationship.						

6. What is this sibling's gender: Male Female

7. Do you still live with your parents? Yes No

8. Does this sibling live with your parents at least half the year or more?
 Yes No

9. Do you and this sibling live together? Yes No

10. If you wanted to visit this sibling, how many miles would you need to drive to reach the place he or she lives? Example: 200)

Number Miles _____

11. If you no longer share a residence with this sibling, how did your moving away affect your relationship?

12. If you no longer share a residence with this sibling, how did his or her moving away affect your relationship?

13. Where does this sibling fall in birth order with your full sibling(s)?

1st 4th 7th 10th or more
 2nd 5th 8th
 3rd 6th 9th

14. How much schooling has this sibling completed? Check **only** the highest level completed or degree received. If your sibling is currently enrolled in school, check the level of the last grade completed or the highest degree received. If you are unsure of the exact answer, mark the level you think is most accurate.

- Some high school but no degree
- High school graduate or GED
- Some college but no degree
- Associate degree (academic or occupational)
- Bachelor's degree
- Master's degree
- Professional or Doctoral Degree

15. What is this sibling's current relationship status? (**check only one**)

- Married
- Remarried
- Cohabiting
- Never Married
- Divorced or Separated
- Widowed
- Other (please specify _____)

16. If your sibling is married or cohabits, how did his or her getting married or starting to cohabit affect your relationship?

17. How many living biological, adopted, or stepchildren does this sibling have, if any? Please write the number of each in the space provided.

- Biological
- Step (child by marriage)
- Adopted (child by legal adoption)

18. If your sibling has a biological child, how did his or her becoming a parent affect your relationship?

The following questions are to help me get better acquainted with you!

19. Gender: Male Female

20. What is your date of birth? MM/DD/YYYY

21. Race/ethnicity (**please check one**):

Hispanic or Latino

Black or African American

Asian

Native Hawaiian or other Pacific Islander

White (non-Hispanic)

American Indian or Alaskan Native

Other

22. How much schooling have you completed? Check **only** the highest level completed or degree received. If currently enrolled in school, check the level of the last grade completed or the highest degree received.

Some high school but no degree

High school graduate or GED

Some college but no degree

Associate's degree (academic or occupational)

Bachelor's degree

Master's degree

Professional or Doctoral degree

23. What is your current marital or intimate relationship status? (**check only one**)

- Married
 Remarried
 Cohabiting
 Never Married
 Divorced or Separated
 Widowed
 Other (please specify
 _____)

24. If you are married or you cohabit, how did getting married or moving in with your partner affect your relationship with this sibling?

25. How many living biological, adopted, or stepchildren do you have, if any? Please write the number of each in the space provided.

- Biological
 Step (your child by marriage)
 Adopted (your child by legal adoption)

26. If you have a biological child, how did becoming a parent affect your relationship with this sibling?

27. Where do you fall in birth order with your full biological sibling(s)?

- 1st 4th 7th 10th or more
 2nd 5th 8th
 3rd 6th 9th

Thank you for completing this questionnaire! Your answers are appreciated and will be kept private and used only for this project.

Appendix M

The Intimacy Scale (Walker & Thompson, 1983)

Please indicate your perception of your relationship using the following scale.

- 1 = Never
- 2 = Rarely
- 3 = Sometimes
- 4 = Often
- 5 = Frequently
- 6 = Almost always
- 7 = Always

Record your perception in the space to the left of each item.

	1	2	3	4	5	6	7
We want to spend time together.							
She shows that they love me.							
We're honest with each other.							
We can accept each other's criticisms of our faults and mistakes.							
We like each other.							
We respect each other.							
Our lives are better because of each other.							
We enjoy the relationship.							
She cares about the way I feel.							
We feel like we are a unit.							
There's a great amount of unselfishness in our relationship.							
She always thinks of my best interest.							
I'm lucky to have her in my life.							
She always makes me feel better.							
She is important to me.							
We love each other.							
I'm sure of this relationship.							

Appendix N

Initial Interaction with Students in HDFS Class

Hello, my name is Jana Meinhold and I'm a graduate student here at Oregon State University. I am in the process of gaining some feedback on the survey for my research project. My project looks at the relationship between brothers and sisters in early adulthood. I am here today to ask if you would be interested in participating in the initial Phase of my project.

The project looks at contact and closeness among siblings and at how life experiences such as getting married or having a child influence that relationship. I will be using a web survey to collect my data in the next few months and I would like your help with my survey. Your participation is completely voluntary and your responses will be anonymous. Your participation or choice not to participate will have no effect on your relationship with any of the research team members or the instructor for this course.

I am placing two Internet addresses on the board. Each one will take you to a different version of the survey. I would like the students sitting on the left side of the room to complete the version one address, and the students sitting on the right side of the room to complete the version two-address. The survey will take 10 to 15 minutes to complete and later this week I will come back to this class and ask you a few questions about the surveys. I will only need 15 to 20 minutes of your time for questions. As you begin the survey, an informed consent document will provide you with more information about the project, your responsibilities and rights, and contact information for the research team in case you have any questions.

I would appreciate your support in completing the research project required for my doctoral degree. If you have any questions, I would happy to answer them. Thanks.

Appendix O

Questions about Web Survey for HDFS Students

Hello again! Today I would like to quickly discuss the web survey you were all asked to complete earlier this week. For those of you who had the time to complete the survey, I have a few questions I would like to ask:

- 1) What did you think of the survey?
- 2) Was there any part that confused you or did not make sense?
- 3) How many of you started the survey but did not complete it? What made you stop?
- 4) Were there any questions you did not answer? Why?
- 5) For those who completed version one, did you like the order of the survey?
- 6) For those who completed version two, did you like the order of the survey?
- 7) Do any of you have any additional questions about the web survey that you completed?

Thanks for all your help. I intend to use the information you have provided to improve the survey for the next phase of my project.

Thanks again!