To Be, or Not to Be (Like My Sibling), That Is the Question:
Examining Modeling and Differentiation Behaviors Among
Siblings in Organized Youth Sport

Keith Vakafutu Osai
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/etd
Part of the Social and Behavioral Sciences Commons

Recommended Citation
Osai, Keith Vakafutu, "To Be, or Not to Be (Like My Sibling), That Is the Question: Examining Modeling and Differentiation Behaviors Among Siblings in Organized Youth Sport" (2018). All Graduate Theses and Dissertations. 7312.
https://digitalcommons.usu.edu/etd/7312

This Dissertation is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.
TO BE, OR NOT TO BE (LIKE MY SIBLING), THAT IS THE QUESTION: EXAMINING MODELING AND DIFFERENTIATION BEHAVIORS AMONG SIBLINGS IN ORGANIZED YOUTH SPORT

by

Keith Vakafutu Osai

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in Family and Human Development

Approved:

___________________________
Travis Dorsch, Ph.D.
Major Professor

___________________________
Randy Jones, Ph.D.
Committee Member

___________________________
Kay Bradford, Ph.D.
Committee Member

___________________________
Shawn Whiteman, Ph.D.
Committee Member

___________________________
Richard Gordin, Ph.D.
Committee Member

___________________________
Richard S. Inouye, Ph.D.
School of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2018
ABSTRACT

To Be, or Not to Be (Like My Sibling), That is the Question: Examining Modeling and Differentiation Behaviors among Siblings in Organized Youth Sport

by

Keith V. Osai, Doctorate of Philosophy
Utah State University, 2018

Major Professor: Dr. Travis E. Dorsch
Department: Human Development and Family Studies

Sibling relationships are typically the most enduring relationship in the family unit. A large body of research documents how sibling relationships occur in the context of the immediate family, how they impact behaviors such as risk-taking, how different cultures view siblings, and how similarities and differences among siblings can be attributed to genetics as well as shared and non-shared experiences. However, one relatively common family context in which sibling dynamics are less understood is organized youth sport. The present dissertation was designed to address multiple gaps in the present literature. This dissertation is comprised of two complementary studies. Study 1, guided by a family systems perspective and a social constructivist epistemology, employed a qualitative methodology in an effort to better understand individuals’ experiences of the processes and mechanisms that impact family and sibling relationships in organized youth sport. Study 2 addressed two competing mechanisms of socialization,
modeling and differentiation, employing a quantitative methodology to examine older siblings’ impact on younger siblings’ participation in organized youth sport. Results from Study 1 show that similarities exist among and between family units. Specifically, families experience both warmth and conflict in sibling relationships, in addition, modeling and differentiation behaviors are reported in multiple families. Of note, a unique pathway of influence (i.e., Parent-Initiated Differentiation) was recognized. This exploratory study helped give voice to families that have children that participate in youth sport. Study 2 results point to the main effect of biological sex being associated with siblings not being in the same main sport. In addition, a three-way interaction between younger siblings’ reports of differentiation x dyad biological sex x and age difference was significantly related to siblings reports of not being in the same main sport. Taken together, these results help enhance youth sport literature by pointing to reasons why siblings would or would not follow each other in their youth sport decisions. Further examination is needed to understand behaviors of modeling and differentiation in youth sport, specifically, how parents influence modeling and differentiation behaviors among siblings.
PUBLIC ABSTRACT

To Be, or Not to Be (Like My Sibling), That is the Question: Examining Modeling and Differentiation Behaviors among Siblings in Organized Youth Sport

Keith V. Osai

Sibling relationships are typically the most enduring relationship in the family unit. A large body of research documents how sibling relationships occur in the context of the immediate family, how they impact behaviors such as risk-taking, how different cultures view siblings, and how similarities and differences among siblings can be attributed to genetics as well as shared and non-shared experiences. However, one relatively common family context in which sibling dynamics are less understood is organized youth sport. The present dissertation was designed to address multiple gaps in the present literature. This dissertation is comprised of two complementary studies. Study 1, guided by a family systems perspective and a social constructivist epistemology, employed a qualitative methodology in an effort to better understand individuals’ experiences of the processes and mechanisms that impact family and sibling relationships in organized youth sport. Study 2 addressed two competing mechanisms of socialization, modeling and differentiation, employing a quantitative methodology to examine older siblings’ impact on younger siblings’ participation in organized youth sport. Results from Study 1 show that similarities exist among and between family units. Specifically, families experience both warmth and conflict in sibling relationships, in addition, modeling and differentiation behaviors are reported in multiple families. Of note, a unique pathway of influence (i.e., Parent-Initiated Differentiation) was recognized. This exploratory study helped give voice to families that have children that participate in
youth sport. Study 2 results point to the main effect of biological sex being associated with siblings not being in the same main sport. In addition, a three-way interaction between younger siblings’ reports of differentiation x dyad biological sex x and age difference was significantly related to siblings reports of not being in the same main sport. Taken together, these results help enhance youth sport literature by pointing to reasons why siblings would or would not follow each other in their youth sport decisions. Further examination is needed to understand behaviors of modeling and differentiation in youth sport, specifically, how parents influence modeling and differentiation behaviors among siblings.
DEDICATION

This is dedicated to my father, Malachi Lave’atu Osai (April 20, 1939 – April 5, 2015).

I finished.
ACKNOWLEDGMENTS

First and foremost, I would like to thank my wife, Laurel, for her continued support and encouragement. She is truly a blessing to me and I would not have been able to complete my doctoral degree without her love and support. She literally helped me spread the word about my dissertation research and helped recruit participants. Besides being my better half, she is beautiful, talented, and intelligent. Laurel, I love you and am eternally grateful for you.

I would like to thank my family: my mother and father, brothers, sisters, nieces, nephews, and my extended Osai, Olsen, and Matsuda family, which also include all those that I grew up with. To my mother, your patience and love have carried me through life. I care for others because you cared for me. I try to give others the benefit of a doubt because that is what you do. I try to be patient because you are patient. Much of what I have learned in life, I have learned from you. To my father, I hear your voice when I want to give up. Because I know you have sacrificed so much to provide for our family with a good life in America, I have tried my best to make your dreams come true by obtaining as much education as possible. I hope you are proud of this accomplishment. I love you and miss you dearly. To my brothers, who made me tough, John, Atu, and Jeff, thank you for paving the way for me to be who I am today. To my sisters, who spoil me, Beth, Ana, Sil, Suli, thank you for helping me feel loved from birth to today. To my fellas, thank you for keeping me grounded. Your friendship is something that I cherish.

I would like to thank my doctoral committee, Dr. Travis Dorsch, Dr. Kay Bradford, Dr. Rich Gordin, Dr. Randy Jones, and Dr. Shawn Whiteman, for their guidance and wisdom. I have learned a great deal from each of them and hope to make
them proud in my future endeavors. To Dr. Travis Dorsch who has worked with me from the beginning, thank you. I will always feel a deep sense of gratitude for the support, guidance, and patience Dr. Dorsch has shown me as I worked through the doctoral program. His “can do” attitude, drive for excellence, and passion for his work are contagious and will serve as a guide as I embark on my professional academic career.

I would also like to thank my Families in Sports Lab family: Logan Lyons, Marshall Grimm, Michael King, Amand Hardiman, and Dr. Ryan Dunn. Thank you for always being supportive of one another and sustaining a positive culture within the lab. It was always refreshing to come into the lab, and I am excited to see what everyone accomplishes in the near future.

Special thanks to my research assistants: Haley Downey and Taylor Wilding. Your help with transcribing and coding was a critical part of the research process. I could not have completed my dissertation without your help. In addition, thank you Dr. Jordan Blazo for your guidance and consultation when I first began to think about what I would like to study.

To all of the recreation league administrators who passed the word along about my research, especially, LeeAnn Powell, Terri Baker, Corey Haddock, Haley Turner, Chad Wright, Kim Olson, and Crystal and Zach Nelson, thank you!

To the Human Development and Family Studies faculty and staff: Dr. Scot Allgood, Dr. Troy Beckert, Dr. Beth Fauth, Dr. Yoon Lee, Dr. Lucy Delgadillo, Dr. Maria Norton, Alena Johnson, Rhonda Jacobs, RaNae Wamsley, Judy Hendrickson, Leslie Hofland, Laura Holley, Steve Beck, and Teresa Bodrero, thank you! To all my
fellow colleagues who I worked with on projects and those who were TA’s for the courses that I taught, thank you!

To Utah State University and the School of Graduate Studies, thank you for providing a great academic atmosphere, where I had the opportunity to grow in a multitude of ways. Thank you StatStudio, Sarah Schwartz and Megan Kawamura.

To Moises Diaz, the one who first encouraged me to embark on this journey in the Human Development and Family Studies program. You hired me to be an advisor in the Multicultural Student Services office and continued to mentor me after our time working together. Thank you for your foresight and wisdom, which I will carry with me in all I do.

To Lisa Parkinson and Sam Brown, and all the staff in the Multicultural Student Service office at BYU, you helped me at a time when I was not sure what I would do. With your help, I graduated with my bachelor’s degree. Your continued support after my time at BYU has meant so much to me. I thank you for helping shape who I am today.

To Dr. Steve Hanks in the Master in Human Resources program, thank you for helping me make the leap into the PhD program and for never giving it a second thought.

To all of my coaches from my elementary school, middle school, high school, community college, and college, thank you for helping me know that I can do more than play sports.

To all of my church leaders who helped form who I am today, thank you for teaching me to be honest in my dealings with my fellowman and to treat others with kindness.

Last, but not least, thank you God, my Heavenly Father, for giving me breath and helping me through the tough times in life. Thank you for blessing Laurel and me with
our son Ephraim. Thank you for giving your Son, Jesus Christ. I hope that my dad is
having a good time in Heaven with You. Please send him my love.

To everyone who has helped me along the way, thank you!

Keith V. Osai
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GENERAL INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>STUDY 1</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Method</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Results</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>STUDY 2</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Method</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Results</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>101</td>
</tr>
<tr>
<td>4</td>
<td>GENERAL DISCUSSION</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>REFERENCES</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>APPENDICES</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td>CURRICULUM VITAE</td>
<td>176</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family Units for Qualitative Interviews</td>
<td>27</td>
</tr>
<tr>
<td>2. Correlations and Descriptive Statistics (Study 2)</td>
<td>91</td>
</tr>
<tr>
<td>3. Summary of Logistic Regression Models</td>
<td>93</td>
</tr>
<tr>
<td>4. Representing three-way interaction involving Differentiation, Biological Sex Composition, Age Difference</td>
<td>95</td>
</tr>
<tr>
<td>5. Representing the Log Odds or Y-Value and Probabilities of the three-way interactions involving Modeling, Biological Sex Composition, and Age Difference</td>
<td>97</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Three-way interactions among variables differentiation x biological sex composition x age difference and probability of younger sibling being in the same main sport as their older sibling</td>
<td>96</td>
</tr>
<tr>
<td>2. Three-way interactions among variables Modeling x Biological Sex Composition x Age Difference and probability of younger sibling being in the same main sport as their older sibling</td>
<td>97</td>
</tr>
<tr>
<td>3. MANOVA results of age difference, biological sex and differentiation</td>
<td>99</td>
</tr>
<tr>
<td>4. MANOVA results of age difference, biological sex and modeling</td>
<td>100</td>
</tr>
</tbody>
</table>
Recent participation rates suggest that organized youth sport has become an important domain for many American families (Sports & Fitness Industry Association, 2016). Indeed, according to the National Council of Youth Sport (NCYS, 2008), approximately 44 million children aged 18 and younger participate in some form of organized youth sport annually, and the literature suggests that 9 in 10 young people will participate in some form of organized youth sport at least once over the course of development (Center for Disease Control and Prevention, 2010; Jellinek & Durrant, 2004). Importantly, youth’s experiences in sport have been associated with positive and negative developmental outcomes (Holt & Knight, 2014; Ullrich-French & Smith; Weiss & Ferrer-Caja, 2002).

Among the positive outcomes associated with participation in organized youth sport are increased self-esteem, increased emotional regulation, increased problem-solving ability, decreased illicit drug use, and decreased school dropout (Barber, Eccles, & Stone, 2001; Eccles, Barber, Stone, & Hunt, 2003). These positive outcomes are often identified as the reasons youth are initially encouraged to participate in youth sport (Fraser-Thomas, Côté, & Deakin, 2005). Conversely, negative outcomes such as higher alcohol consumption, delinquent behavior, use of performance-enhancing drugs, and overuse injuries have also been reported as a result of youth sport participation (Bean, Fortier, Post, & Chima, 2014; Fraser-Thomas, Côté, & Deakin, 2008). These negative outcomes help explain why 70% of youth dropout of sport by the age of 13 (see Brenner, 2016).
Taken together, these positive and negative outcomes afford a developmental understanding of youth participation in organized sport. However, they also point to the fact that youth sport is simply a “vehicle” in which positive and negative development has the potential to take place. To better understand how sport-related outcomes are manifest, scholars must understand the individuals who drive the vehicle (e.g., parents, coaches, administrators) as well as the many other passengers (e.g., siblings, peers) who operate in this domain. Indeed, Holt and Knight (2014) suggested that “merely participating in sport does not necessarily produce positive or negative outcomes; rather, the developmental benefits of sport participation are contingent on social contextual factors. These social contextual factors are largely based on how peers, parents, coaches, officials, and administrators contribute to the ways in which youth sport is delivered and experienced” (p. 32). While this quote makes it clear that a variety of relationships have the potential to impact an individual’s youth sport experience, the present dissertation is designed to focus on the role of family relationships and interactions associated with youth sport participation and its outcomes.

**Families in Youth Sport**

At the intersection of organized youth sport and family relationships lies a unique ecological opportunity to study families as they operate in a naturalistic, and rather common, developmental context. As such, multiple sport psychology researchers have taken advantage of the youth sport setting to examine family processes and outcomes. The majority of this literature, perhaps not surprisingly, highlights the parent-child
relationship and its impact on the development of children (see Holt & Knight, 2014 for review).

In a brief overview of the contemporary sport parenting literature, Knight, Berrow, and Harwood (2017) provided insight into: (a) the influence of parental involvement on children (e.g., Dorsch, Smith, & Dotterer, 2016; Elliott & Drummond, 2017); (b) factors influencing parent involvement (e.g., Dunn, Dorsch, King, & Rothlisberger, 2016; Knight & Holt, 2014); and (c) the strategies developed by parents to facilitate their involvement in their children’s sport (Dorsch, King, Dunn, Osai, & Tulane, 2017; Thrower, Harwood, & Spray, 2017). Highlighted in this review was the perception of pressure versus support and the importance for parents to know how an objective set of actions can elicit either (or both) feelings in their child. Some of the factors recognized as influencing children’s experiences and/or outcomes are parent financial investment, parent goals, and sport culture. As some of these have been shown to produce negative consequences, recent efforts have been made to mitigate damaging experiences while increasing positive parent-child interactions in youth sport. These efforts have come in the form of interventions, workshops and strategies, which target parent influence in youth sport (Dorsch et al. 2017; Lafferty & Triggs, 2014; Vincent & Christensen, 2015).

Despite the field’s focus on parents – or perhaps because of it – there exists surprisingly little research targeting the effect of siblings in the youth sport context (see Blazo & Smith, 2017 for review). Given the potential influence of siblings on one another across childhood and adolescence (see Whiteman, McHale, & Crouter, 2007), as well as
the amount of time that siblings spend together during their formative years (Larson & Richards, 1994; McHale & Crouter, 1996), it follows that siblings may readily impact one another in organized youth sport. As such, there exists a theoretical and practical need to examine the role of sibling relationships on youth’s experiences and outcomes in organized youth sport.

**siblings in Youth Sport**

To understand the complexity of families as they operate in organized youth sport, one must look beyond the parent-child relationship to consider the role of siblings (Côté & Hay, 2002). In a systematic review of literature revolving around siblings in sport and physical activity contexts, Blazo and Smith (2017) noted the wide range of influences among and between siblings. Their review highlighted five topic areas related to siblings in youth sport: (a) within-family influences such as family size and family participation in physical activity, (b) sibling-specific influences such as participation and biological sex, (c) sibling experiences, both positive and negative, (d) biological sex composition in relation to relationship quality, and (e) the effects of comparisons made by siblings and others outside of the dyad. Findings highlight that unique family influences such as the amount of time that a family spends in physical activity contexts can influence the amount of time siblings spend doing these same activities. More explicitly, by simply having a sibling who is involved in sport or physical activity, individuals themselves are more likely to be involved in sport and/or physical activity contexts. Importantly, the review also noted that ascribed characteristics (e.g., biological
sex composition, birth order) are also linked to modeling behaviors in youth sport. Furthermore, as siblings engage in sport and physical activities with one another, positive feelings such as support, and negative feelings such as jealousy, have the potential to influence experiences and outcomes associated with participation.

Sibling interaction in sport varies on a spectrum from competition to cooperation, and usually contains aspects of both. As an example, in situations where a younger sibling feels like they have to “measure up” to an older sibling, feelings of jealousy may be present (Blazo, Czech, Carson, & Dees, 2014; Côté, 1999; Davis & Meyer, 2008). This is important, in light of the fact that many younger siblings face comparisons when an older sibling is labeled as a great athlete. Siblings also experience cooperation in several organized youth sport settings. In cases where positive feelings and cooperation exist, youth may utilize their sibling as a model, mentor, or coach, and are more likely to continue to participate in the same sport as the older sibling (Fraser-Thomas et al., 2008).

When siblings participate in sport simultaneously, a number of family issues can arise. Past empirical work has targeted the amount of time families spend together, how fairness is perceived by multiple family members, and the impact of living with a “star” athlete (e.g., Côté, 1999; Trussell, 2012). An overarching theme in this area of literature is that organized youth sport has the potential to both strengthen and challenge relationships among siblings within the family (Trussell). Specifically, it has been suggested that families have the opportunity to bond through a child’s sport participation, but may also face trial or hardship, as parents attempt to balance participation
opportunities, resources, and the allocation of physical and emotional support among multiple children at varying stages of development and/or levels of talent.

One interesting area of sibling in sport research has targeted same-sex sibling dyads who compete against one another in competitive settings (Davis & Meyer, 2008). Data from this study indicate that sibling competitors experience positive and negative feelings simultaneously, suggesting that these two constructs are orthogonal. Specifically, while both siblings in the dyad often described wanting to beat each other, there often existed high levels of support within the sport relationship. An anecdotal example of this phenomenon is the sister dyad of Venus and Serena Williams, who often compete against one another in professional tennis matches. This relationship demonstrates an interesting juxtaposition of sport and relationship goals as they occur across siblings who compete against one another. Incidentally, these findings mirror those from the general sibling relationship literature (e.g., Whiteman & Christiansen, 2008). Specifically, Whiteman and Christensen noted that many of the siblings in their study reported both modeling and differentiation influence processes.

The sibling relationship is impactful and can also be intriguingly complex in competitive youth sport settings. In a phenomenological study utilizing in-depth participant interviews, Blazo and colleagues (2014) found that positive experiences often occurred in conjunction with negative experiences in sport. Some of the themes highlighted by these authors were positive family influence and jealousy. These themes align with findings from Côté (1999), in that older siblings tend to see themselves as role models, whereas younger siblings often express feelings of resentment and/or want to
differentiate from an older sibling. These two mechanisms, modeling and differentiation, represent unique and divergent pathways of influence in the sibling sport relationship.

Previous research targeting siblings in sport has largely maintained a focus on siblings’ positive and negative experiences; however, emerging work is being designed to highlight performance differences between members of the sibling dyad (e.g., elite vs. pre-elite vs. non-elite). This body of work suggests that younger siblings who have older siblings that participated in organized youth sport typically go on to outperform the older siblings (Hopwood, Farrow, MacMahon, & Baker, 2015). Therefore, in sibling relationships, it seems as if younger siblings use older siblings as role models and rivals in order to learn, grow, and ultimately perform to the best of their ability athletically. This phenomenon has been documented outside of youth sport as well, as younger siblings have been shown to use older siblings as role models when it comes to risky behaviors such as the consumption of alcohol (Whiteman, Jensen, Mustillo, & Maggs, 2016).
While scholars have investigated multiple influences among siblings in youth sport, certain processes of influence remain untapped, leaving the field ripe for further exploration. In their recent review, Blazo and Smith (2017) have offered a roadmap of issues for researchers to address when examining siblings in youth sport. Three specific directions are: (a) using theory to guide the research process; (b) moving beyond examining variables such as age difference, birth order, and family size; (c) taking into account more than one sibling’s point of view regarding the relationship. An overarching goal of this dissertation is to address each of these issues in an effort to purposefully, and in a theoretically driven way, move this line of research forward.

**Guiding Theoretical Perspectives**

While previous research examining siblings in sport documents various processes and outcomes related to the sibling relationship, one potential limitation has been the lack of guiding theory. To extend the field’s present understanding of siblings in organized youth sport while also addressing this limitation, I employed an overarching theoretical lens of family systems theory. In addition, I examined sibling relationships and behavior through the lens of two competing theories (e.g., *social learning* and *differentiation*). Specifically, I will examine the sibling influence processes of modeling and differentiation. Together these theories helped guide my research process and interpret the results.

One broad theoretical perspective that can aid scholars is family systems theory (Cox & Paley, 1997). As part of the larger classification of systems theories (Bertalanffy,
a family systems perspective can be utilized to examine the family as an integrated system that is greater than the sum of its parts (Cox & Paley, 1997; Smith & Hamon, 2012). In adopting this lens, each member of a family is viewed as influential in the physical, cognitive, and socioemotional development of all other members. An overarching assumption of the family systems framework is that individuals cannot act without impacting all other members of the family unit (Smith & Hamon, 2012).

Two specific tenets of family systems theory that help explain how family members impact each other are circular causality and feedback. Circular causality views behavior as a point in the process of development. Rather than viewing interactions as linear (i.e., A causes B), circular causality acknowledges that behavior both influences and is influenced by other behaviors (Minuchin, 1985). For example, when examining parent differential treatment in youth sport, a researcher employing a family systems lens would examine how parents’ differential treatment of children influences sibling relationship quality and how sibling relationship quality influences parents’ differential treatment. This is important because family interactions do not occur in isolation. In the previous example, the younger child might perceive the parent as favoring the older sibling, and in turn treats the older sibling in a negative or resentful way, and this resentful interaction causes the parent to treat the siblings differently.

In observing this sibling dynamic, parents may subsequently give positive or negative feedback to one or both children. Whereas positive feedback allows for change, negative feedback is provided in an effort to keep things the way they are (i.e., homeostasis) based on established routines. In cases where siblings may have a
conflictual relationship as a result of parent differential treatment, parents may unintendedly reinforce this conflict by continuing to seek homeostasis. However, if parents decide to change the family’s expectations or routines, they may also change their differential treatment, resulting in a new “normal” within the family and its interactions.

Family systems theory suggests that it is impossible to fully understand an individual outside the context of her or his family and its constituent relationships (Minuchin, 1985). To effectively understand the impact of relationships on individual development, families have traditionally been examined through various subsystems (e.g., the parental unit, parent-child dyads, sibling dyads or clusters). Examining the sibling subsystem allows researchers to not only examine the effects of each sibling on the other, but also the impact of the sibling relationship on the other individuals, relationships, and interactions that make up the family system. In this respect, the study of sibling relationships in youth sport through a family systems lens represents a potentially fruitful research path. In addition, considering additional explanation (i.e., modeling, differentiation) for why certain behaviors occur will help guide this research study.

*Modeling* is defined as the process by which individuals learn via the observation of others (Bandura, 1977; Mischel, 1966). For example, as a younger child observes an older sibling, the younger child may form an idea of how actions are (*should* be) performed, using this as a guide for her or his own future actions. The journey from observation to modeling behavior can be broken down into four processes: attentional, retention, motor reproduction, and motivational.
Attentional processes include characteristics of the observer in relation to the potential model, and association to the model, both of which can help explain why a model would be salient to the observer. Specifically, as siblings share similar characteristics (i.e. biological sex, age) and by virtue of being siblings spend more time together, they in effect become salient models to one another.

Retention processes, help us understand that a behavior cannot be modeled unless it is remembered. This process relies on both imagery and verbal representation of the behavior in question. Coupled together, as an individual observes a behavior they first process the information by imagining themselves reproducing the behavior, which then can be solidified by rehearsing overtly or verbally (Jeffrey, 1974). Imagining and verbally recalling a behavior help to code the behavior, which then can be rehearsed and retained for future retrieval. As individuals retrieve the modeled behavior from memory they may rehearse or imitate the behavior immediately or at another time. Imitating the behavior immediately does not require as much in the way of cognitive functioning because the behavior is readily available as opposed to behavior that is recalled and rehearse when the modeled behavior or event has occurred in the past.

Motor Reproduction processes represent the ability to perform the desired behavior. In order to reproduce the desired results, individuals will reproduce the behavior cognitively and then attempt the behavior. Because attempts to imitate and model behavior usually do not happen with a first attempt, individuals go through a trial-and-error process that can be assisted by corrective feedback. Through this process, the behavior is more likely to be modeled than not.
Motivational Processes encompass whether or not an individual will feel the need to model a behavior. One key element of this process depends on the consequences of the behavior. If the consequences are perceived as favorable, then the individual will be more likely to imitate that behavior. However, if the consequences are not desired then the individual will most likely not imitate the behavior. As individuals attempt to imitate and model behavior their continued engagement in the performance of the activity will depend on the type of reinforcement they observe. If observers notice that a behavior is reinforced positively then they will be more likely to imitate that behavior. However, if the model is punished for their action or receives no type of feedback, then the observer will most likely not attempt to imitate the behavior displayed.

As individuals attend to, retain, reproduce, and feel motivated to perform an observed behavior, they will be more likely to imitate and model the observed behavior. These four processes help describe why individuals model behavior.

Importantly, previous research has demonstrated that siblings who share the same biological sex and are closer in age are more likely to model behavior compared to those who are of the opposite sex and have a greater age difference (McHale, Bissell, & Kim, 2009; Rowe & Gulley, 1992; Trim, Leuthe, & Chassin, 2006). In addition, sibling research investigating deviant and substance abuse behaviors notes that in addition to being the same biological sex and closer in age, siblings who share warm relationships are more likely to model risky behaviors (e.g., McHale et al., 2009; Slomkowski, Rende, Conder, Simons, & Conger, 2001; Whiteman, Bernard, & McHale, 2010). Of
consequence to the present dissertation, sibling influence processes such as modeling have been shown to spill over into athletic domains as well (see Whiteman et al., 2007).

Findings in the family and human development literature align with literature designed explicitly to examine siblings in sport (e.g., Blazo et al., 2014). Specifically, in their phenomenological study of sibling influence in youth sport Blazo and colleagues identified themes related to jealousy and fondness. Participant answers categorized as illuminating “fondness” demonstrated that younger siblings wanted to be like their older sibling because of all of the positive things that they witnessed as a result of their older siblings’ achievements in and out of sport. These feelings were recognized as being related to modeling behaviors in youth sport, which can lead to continued participation in youth sport. In line with these findings, Osai and Whiteman (2017) found that older siblings’ interests, skills, and participation in sport predicted younger siblings’ participation in the same domains. Together these findings point to modeling as a key process that has the potential to influence siblings’ youth sport participation decisions. However, siblings do not always choose the same path in life and/or sport; therefore, it is important to consider an opposing sibling influence process, differentiation, which may help explain why some siblings decide to choose different pathways in organized youth sport.

Differentiation has been defined as the process by which individuals exert themselves to deidentify from one another in an effort to establish a unique identity and gain access to resources (see Ansbacher & Ansbacher, 1956; Schacter, Gilutz, Shore, & Adler, 1978; Schacter, Shore, Feldman-Rotman, Marquis, & Campbell, 1976; McHale,
Updegraff, & Whiteman, 2012). Some scholars have explained that sibling differences occur because of non-shared environments (Plomin & Daniels, 1987). Others have pointed to potential mechanisms that seem to predict this type of behavior in siblings, specifically noting that siblings who are similar in objective ways (i.e., biological sex and age) are more likely to differentiate from each other (Feinberg & Hetherington, 2000; Schacter & Stone, 1987; Tesser, 1980).

In line with differentiation theory, it is possible for siblings to report more warmth and less conflict in the sibling relationship when they chose divergent pathways. Differentiation has been suggested as one potential pathway to deal with sibling relationship conflict (Feinberg, McHale, Crouter, & Cumsille, 2003). Interestingly, when Whiteman, Jensen, and Maggs (2013) tested for potential predictors of modeling behaviors in reference to alcohol, cigarette, and marijuana use, they found support for support for both modeling and differentiation processes. Surprisingly, as younger siblings reported lower levels of modeling, and had older siblings who drank alcohol, these younger siblings were less likely to drink alcohol when compared to similar younger siblings that had older siblings who did not drink alcohol.

In practice, it has been noted that differentiation can come in the form of lower levels of reported sibling influence (see Whiteman, McHale, & Crouter, 2007). Specifically, as siblings report lower levels of sibling influence, one member of the relationship may decide to choose to participate in a different activity. Furthermore, as one sibling observes the other, he or she may decide on a different path or activity in an effort to reduce competition with that sibling, while also protecting against social
comparison and rivalry (Whiteman, McHale, & Crouter). In the youth sport literature, differentiation has been documented in settings where individuals have a sibling who is an elite-level athlete (see Knoetze-Raper, Myburgh, & Poggenpoel, 2016) and where younger siblings decide to participate in more risk-taking sports than an older sibling (Sulloway & Zweigenhaft, 2010). Collectively, this literature suggests that differentiation is typically experienced when a younger sibling wants to chart her or his own course in pursuit of a unique athletic niche, as well as parent resources (i.e., attention, money, time affection) (Blazo, Czech, Carson, & Dees, 2014).

**Overview of Studies**

The present dissertation is comprised of two complementary studies designed to examine sibling relationships and influence processes in organized youth sport. Study 1 is a collective case study of 12 youth sport families. It is designed to highlight how multiple family relationships and the processes that define them impact children’s participation experiences and outcomes in organized youth sport. Using family systems theory as a guiding framework, Study 1 was designed to highlight how specific family processes affect the perceptions and experiences of the individual athlete, the sibling dyad, and the family as a whole. This study applied an interpretive lens, meaning that the knowledge gained is subjective and co-constructed through social interaction with participants (White & Klein, 2008). In alignment with this social constructivist epistemology, this qualitative study utilized interview methodology across four members of each family (target child, older or younger sibling, mother, and father) in an effort to understand how
family processes (e.g., parent differential treatment) affect children’s participation experiences in organized youth sport and how these participation experiences, in turn, affect sibling influence processes such as modeling and differentiation.

Study 2 is a cross-sectional study of 221 children and adolescents participating in organized youth sport across the United States. It was designed to examine how younger siblings’ reports of modeling and differentiation, in reference to older siblings, predicts similarities/differences in siblings’ youth sport participation choices. Study 2 focused on the younger sibling in each family, as theory and research have suggested older siblings maintain greater influence on younger siblings than the alternative (e.g., Bryant, 1982; Sutton-Smith & Rosenberg, 1970; Tucker et al., 1999; Whiteman et al., 2007). Guided by a positivistic ontology, Study 2 sought to enhance present knowledge of sibling influence processes in sport through standardized, objective inquiry (White, 2004; White & Klein, 2008). In alignment with this ontological stance, this quantitative study employed survey methodology to examine similarities and differences among sibling dyads in terms of how modeling and differentiation are associated with sport participation decisions.

Together, these complementary studies extend present knowledge of sibling relationships and influence processes in organized youth sport. Informed by past research and theory, these studies were designed to identify relationships among key constructs (e.g., modeling and differentiation) while also giving voice to the family members who experience these processes in sport. Results shed light on how factors such as younger siblings’ reports of modeling and differentiation, sibling sport choice, biological sex, birth order, age difference, sibling relationship quality and parent-child relationship
quality may impact siblings’ youth sport experiences and choices. Collectively, results have the potential to assist researchers and practitioners in understanding how the youth sport context as well as family relationships affect children and adolescents’ participation in youth sport.
CHAPTER 2

FAMILY MEMBERS’ INFLUENCE AND PERCEPTIONS OF SIBLING RELATIONSHIPS IN ORGANIZED YOUTH SPORT

(STUDY 1)

Family relationships have the potential to impact children’s developmental trajectories in a variety of achievement contexts and perhaps the most common of these contexts in the United States is organized youth sport (Côté, 1999; Jellinek & Durrant, 2004; Sports & Fitness Industry Association, 2016). Within the organized youth sport context, the vast majority of family-related research has targeted the parent-child relationship (e.g., Coakley, 2006; Dorsch, Smith, & McDonough, 2015; Fraser-Thomas et al., 2005; Knight, Dorsch, Osai, Haderlie, & Sellars, 2016). This focus is for good reason, as parents hold the potential to impact children’s sport participation choices, experiences, and outcomes (see Holt & Knight, 2014 for a review). However, while parent-child relationships have the potential to greatly influence the sport experience for children, siblings also serve as an important determinant of children’s development and experience within the family, and therefore within the context of youth sport.

The influence of siblings has been well documented outside of sport covering topics such as sibling relationship across the lifespan, socialization, adjustment, resource dilution, and behavioral genetics (e.g., Cicirelli, 1995; Dunn, 2007; McHale et al., 2012; Plomin & Daniels, 1987; Slomkowski et al., 2001; Whiteman et al., 2010); however, as noted in Blazo and Smith’s (2017) review, there has been less research attention paid to the impact of sibling relationships on participation in organized youth sport contexts.
This is surprising, given the amount of time siblings spend together (Larson & Richards, 1994; McHale & Crouter, 1996), the roles that siblings adopt within a dyadic relationship (e.g., models, rivals) (Whiteman, McHale, & Crouter, 2007), and the amount of time, energy, emotion, and money many American families allocate toward the youth sport participation of their children (Dunn et al., 2016).

In an effort to bridge this gap in understanding, scholars have called on researchers to examine siblings’ impact on youth sport participation (see Côté & Hay, 2002; Trussell, 2012). In answering this call, most researchers have sampled a single child from within the family unit, thus delimiting understanding of the family sport context to one child’s perceptions of the sibling relationship. Because organized youth sport is a setting in which multiple members of the family interact simultaneously (Dorsch et al., 2015), it is imperative that researchers adopt a more holistic lens by accounting for the range of social relationships and experiences that occur within the family unit (Blazo et al., 2014). In line with this perspective, one promising lens through which sibling relationships in organized youth sport can be viewed is family systems theory (see Cox & Paley, 1997).

Built from systems theory (Bertalanffy, 1968), the family systems perspective affords a framework by which researchers can consider the family as a whole, thus fostering a better understanding of how the actions of one individual within a family affect the processes and outcomes across all other familial relationships (Cox & Paley, 1997). General systems theories recognize the way interdependent parts affect the whole of a system (Bertalanffy). When a family is the unit of analysis (i.e., the “system” under
investigation), researchers can utilize the family systems framework to consider how interdependent members of the family (e.g., brother, sister, mother, father) interact to influence individuals’ thoughts, emotions, and behaviors as well as the overarching relationships within the family.

In examining sibling relationships, four basic tenets of family systems theory are important to consider: (a) wholeness and order, (b) hierarchical structure, (c) feedback, and (d) circular causality (see Cox & Paley, 1997; Smith & Hamon, 2012). Wholeness and order refer to how the dyadic sibling relationship cannot be understood without also understanding how other members of the family interact, both with those siblings and with each other. Hierarchical structure refers to the fact that each family system is comprised of smaller sub-units (i.e., sibling dyads, parental dyad) which are systems in themselves. This is important because each sub-unit impacts other sub-units, as well as the family as a whole. Feedback highlights the type of communication (i.e., positive or negative) that takes place when behavior deviates from existing “homeostatic” patterns, as well as how the communication either encourages deviation from the norm (morphogenesis) or maintenance of current patterns (morphostasis). Circular causality refers to feedback loops in which each family member affects others recursively, as opposed to a linear path of influence (e.g., father impacts child’s behavior). An example of this is when a child’s misbehavior elicits a response from a parent, which then prompts a new reaction from the child, and perhaps subsequently another modified response from the parent. Together, these four tenets strengthen researchers’ understanding and application of family systems theory in a number of domains. Employing these tenets of
the family systems framework, the present study is designed to highlight how specific family processes affect the perceptions and experiences of the individual athlete, the sibling dyad, and the family as a whole.

At present, much of the literature addressing sibling relationships in organized youth sport has focused on how siblings are similar with respect to amount (i.e., hours per week, number of sports) of sport participation (see Blazo & Smith, 2017). A range of qualitative work has also been designed to examine sibling perceptions of the sibling sport relationship and the impact this relationship has on their family relationships and youth sport experience (Côté, 1999; Fraser-Thomas et al., 2008; Trussell, 2012).

In his foundational youth sport research study, Côté (1999) examined four families youth sport experiences, highlighting the various stages that families go through when participating in youth sport (i.e., sampling, specializing, investment). In addition to these stages, he found that in some cases younger siblings report feelings of jealousy and bitterness towards their older siblings, while older siblings report that they serve as a model for their younger siblings. These types of reports by siblings can help identify reasons why siblings continue participation in or drop-out of youth sport.

To further examine the reasons why athletes continue or discontinue participation in sport, Fraser-Thomas et al. (2008) interviewed 10 athletes who had dropped out of swimming and 10 athletes who were still participating. Of the reasons found for prolonged engagement and discontinuance in swimming was the sibling relationship. Swimmers who dropped out reported sibling rivalry existing within their sibling relationship, while siblings who continued participating reported positive sibling
relationships. This work highlights the potential impact that siblings can have across their youth sport experience. Furthermore, Trussell (2012), interviewed 19 youth athletes to find out how youth sport impacts sibling relationships and how siblings impact their youth sport experience. Using a constructivist lens, Trussell found that youth sport both challenged and supported sibling relationships and that what happened in youth sport sometimes carries over into family life. While youth sport provided a context for shared engagement and shared identity among siblings it was also noted as a context where teasing can take place. In both cases, we see that sibling behavior can affect the youth sport experience of a brother or sister.

While these contributions to the literature offer insight into siblings’ perspectives of sibling relationships in organized youth sport, the field has yet to fully explore other family members’ perceptions of -- and potential influence on -- the sibling sport relationship. One strategy for addressing this gap, while also attending to the unique experiences of the siblings within the dyad, is to examine parents’ and children’s perspectives within and across families.

Informed by this strategy, the purpose of the present study was to describe how family relationships and processes affect sibling relationships and individual participation in organized youth sport. In pursuing this aim, four targeted research questions will be addressed: (a) How do family relationships and processes influence sibling warmth, conflict, and motivation to participate in youth sport? (b) What processes exist within families that contribute to sibling modeling and differentiation in youth sport contexts? (c) How do parent-child relationships affect sibling relationships in youth sport? (d) How
are family processes and sibling relationships in sport similar and different within and across families?

Because this research is exploratory in nature and grounded in an interpretivist epistemology, no formal hypotheses were offered. However, based on previous research (Blazo & Smith, 2017), as well as anecdotal accounts of high profile sibling dyads in sport (e.g., Venus and Serena Williams, Reggie and Cheryl Miller, Dom and Joe DiMaggio), it was generally expected that: (a) siblings who participate in the same sport would report both warm and conflictual relationships and that children’s motivation would depend on the perceived quality of the sibling relationship (i.e., warm relationships associated with higher motivation, conflictual relationships associated with lower motivation); (b) greater perceptions of parent differential treatment would be associated with greater sibling differentiation; (c) equally warm parent-child relationships would be associated with warm sibling relationships and higher conflictual parent-child relationships would be associated with conflictual sibling relationships; and (d) families with similar sport experiences (i.e., children of the same sex playing the same sport) would demonstrate more similar sibling relationship qualities and sport participation outcomes than families with differing sport experiences (i.e., children of the opposite sex playing different sports). This last expectation is based on previous research regarding a modeling type of hypothesis, which notes that the more similar siblings are in ascribed ways (i.e., biological sex and age), the more likely younger siblings will model older sibling behaviors (Slomkowski et al., 2001).
**Method**

**Design and Methodology**

The present collective case study (Stake, 2005; Thomas, 2011) was guided by an interpretive (i.e., subjectivist) ontology. A social constructivist epistemology (Schwandt, 2000) guided the present study, as “reality” was interpreted as socially constructed via participants’ language, consciousness, and shared meanings (White & Klein, 2008). Guided by this epistemology, data collection was guided by pre-specified research questions, but remained flexible based on individual and family related factors. A primary aim of the present study was to understand and explicate multiple cases (i.e., families) that experience sibling dynamics in organized youth sport. Consistent with the underpinnings of collective case study methodology and social constructivism, the goal was not to generalize the findings from this study to other cases, but rather to understand the 12 cases in this study fully (Creswell, 2007).

To afford the collection of personal and introspective interview data, the primary researcher (Mr. Keith Osai) aimed to build trust and rapport with participants by conducting all interviews and by communicating with participants before and after these interactions. The result of this strategy is rich within-case analyses for each of the 12 family units as well as a collective analysis of the families under investigation. Examining multiple representative cases afforded the within and cross-case analyses (i.e., the common and unique experiences of families). In describing the individual and collective, assertions and interpretations of families’ and family members’ lived
experiences are forwarded, ultimately yielding an enhanced understanding of individuals’ perceptions of sibling dynamics in organized youth sport.

Participants

Twelve families, each consisting of two parents and two siblings, were targeted for recruitment. This resulted in a final study N of 48 participants. Eleven families reside in Utah and one family was from California but was interviewed in Utah. Operationally, parents (\(M_{\text{age}} = 39.0; SD_{\text{age}} = 2.73\), African American = 2, Caucasian = 20) were defined as primary caregivers who lived in the home with both children. Siblings (\(M_{\text{age}} = 11.3; SD_{\text{age}} = 1.66\), African = 2, African American = 2, Caucasian = 18) were defined as two children living in the same household who shared the same set of parents. A stratified sample of families was identified based on sibling sport participation style, biological sex, and birth order. Table 1 highlights the 12 cells filled during participant recruitment using a 3 x 4 rubric based on these characteristics, in addition, each participants age is listed next to their listing of mother, father, and sibling. The three rows represent sibling sport participation style: (a) both siblings in the same sport, (b) both siblings in a sport but different from each other, and (c) one sibling in sport and one not in sport. Families with one child in youth sport and one out of youth sport were included in order so as to see why younger siblings did not participate in youth sport. Specifically, we wanted to find out if it was due to the relationship with their older sibling, parent, or another reason. Previous research on sibling influence points to younger siblings following their older siblings behavior (Whiteman et al., 2013) and choosing a different path (Feinberg & Hetherington, 2000). In addition, further exploring why siblings do not participate in
youth sport will further add to research examining youth sport dropout and continued participation (Fraser-Thomas et al., 2008). The four columns represent biological sex, where each sibling dyad was either the same (i.e., female-female or male-male) or mixed (i.e., male-female and female-male) sex. The third criterion was birth order, which is only necessary to apply to mixed-sex dyads. In the third column, families consisted of an older brother and younger sister, and the fourth column, families consisted of an older sister and younger brother. This stratified sample is important to this collective case study because it helped to exam a variety of family experiences in youth sport, who differed in key ways (i.e., biological sex, birth order, youth sport participation). These differences helped the researchers examine the themes that were discovered within and between family types.

Procedure

Upon institutional review board approval, families were recruited through youth sport recreation leagues, youth sport venues, and word of mouth. Families who expressed interest in participating were contacted via email or phone (see Appendix A for email templates and recruitment flyers). Initial recruitment efforts consisted of a brief explanation of the study and information about the nature of participation to prospective participants. Over four hundred families were contacted by the primary researcher to gauge interest in participating. This was accomplished by sending emails to youth sport
## Table 1

*Family Units for Qualitative Interviews*

<table>
<thead>
<tr>
<th>Sport Participation Group</th>
<th>Same Biological Sex</th>
<th>Mixed Biological Sex and Birth Order</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Same Biological Sex</td>
<td>Male/Male</td>
</tr>
<tr>
<td></td>
<td>Female/Female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male/Male</td>
<td></td>
</tr>
<tr>
<td>Both siblings in the same sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Unit 1</td>
<td>Father (36)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (36)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Female)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Male)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td>Family Unit 2</td>
<td>Father (39)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (35)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Male)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td>Both siblings in a sport but different from each other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Unit 5</td>
<td>Father (40)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (41)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Female)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Male)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10)</td>
<td></td>
</tr>
<tr>
<td>Family Unit 6</td>
<td>Father (41)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (38)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Male)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Male)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td>One sibling in sport and one not in sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Unit 9</td>
<td>Father (43)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (42)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Older Female, in-sport)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Younger Female, no-sport)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td></td>
</tr>
<tr>
<td>Family Unit 10</td>
<td>Father (40)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother (37)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Older Male, in-sport)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling (Younger Male, no-sport)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td></td>
</tr>
</tbody>
</table>
parents and league directors, visiting youth sport venues and distributing fliers to
participants, and receiving referrals from individuals who knew someone that might be
interested in participating in this study. Approximately 57 parents expressed interest in
participating in this study, on behalf of their families. Once participants indicated interest
in taking part in the study, a follow-up email highlighting the study’s procedures for
participation was disseminated. Once it was determined that families met the research
criteria parents were sent an email confirming participation in this study. In this email,
participants were asked to confirm a day and time to participate in the series of four
family interviews (father, mother, target sibling, proximal sibling). Once a date and time
were confirmed, a meeting location was finalized, and participants were sent a
confirmation email.

On the day of each set of family interviews, Informed Consent/Assent forms (see
Appendix B) were reviewed with participating members of the family. Before the first
interview, parent participants were asked to provide consent for themselves and their
participating children (all children in this study were minors, and therefore not of age to
provide legal consent). Children were asked to offer written assent prior to participating.
Before interviews, parents filled out a brief survey (see Appendix C). Interviews took
place at a predetermined meeting location (e.g., public establishment, local library,
recreation center, USU main campus) and the interviewer attended to participants’
privacy concerns. After meeting with the family together, family members were
interviewed individually and separately from other family members, but in the same
location and on the same day.
A semi-structured interview guide comprised of open-ended questions (e.g., “How has your relationship with your sibling affected your participation in youth sport?”) was used to guide each interview (see Appendix D). Follow-up probes were used to clarify participants’ statements, to obtain more information about topics of interest, and to guide the course of the conversation. In all, more than nine hours of interviews were conducted across the 48 participants. At the end of each interview session, parents were given one $20 Walmart gift card for the family’s participation.

**Data Analysis**

After each set of interviews, the four individual interviews from each family were transcribed verbatim and cross-checked for accuracy against the original recordings. A three-person research team ultimately engaged in the coding process, a strategy known as researcher triangulation (Lincoln & Guba, 1985; Stake, 2005). The research team was comprised of the primary researcher, Mr. Keith Osai, a student researcher, Ms. Haylee Downey, and a third researcher Dr. Travis Dorsch (Mr. Osai’s major professor).

As a first step in coding, all three members of the research team re-read the transcripts to (re)familiarize themselves with the data. The primary and student researcher then conducted a second read of the 48 interviews, producing a list of inductive themes and case narratives experienced by participants. In constructing the list of themes, the researchers (independently) created a full matrix for each family in which all coded text was organized by theme. The primary and student researcher then engaged in a consensus process to review potential changes to the coding framework. Serving as a critical friend (Hill, 2002; Kincheloe & McLaren, 2000), the third researcher was given a list of themes
and example quotes and compared each theme to its representative quote, ultimately offering feedback on the first iteration of the coding framework. Incorporating recommendations made by the student and third researcher, the primary researcher revised the data matrices for each family and began to create final case narratives for each of the 12 family units.

To further bolster the analytic process, the third researcher, who is experienced in the nuances of qualitative research served as a peer debriefer (Creswell, 2007) during this final stage of data analysis. Specifically, the primary and third researcher communicated regarding the labeling of specific themes, quotes associated with those themes, and the overall representation of participants in the 12 family narratives. This process has been utilized in past families in sport research (e.g., Dorsch et al., 2015), and yielded a number of significant edits to the final coding framework.

Data are ultimately represented in the form of case narratives for each family (N = 12). In line with collective case study methodology, these narratives offer brief descriptions of participants’ experiences of the interactions that occurred within each family unit. Through personal quotes, sibling and parent perceptions of sibling relationships in organized youth sport are depicted. Full case narratives are constructed, in part, to document the subjective experiences of a range of families, highlighting shared and non-shared characteristics of youth sport participation across the 12 family units. Separate narratives were constructed by the student researcher and primary researcher, and subsequently reviewed by the third researcher. Both narratives, as well as feedback provided by the third researcher, were reviewed by the primary researcher who created a
penultimate narratives for the 12 participating families. The third researcher then provided feedback on the final narratives, leading to minor edits to the narratives. Incorporating feedback from the third researcher, the primary researcher revised the narratives for each family, ultimately arriving at the final collective case report offered in the Results section.

To further represent the experiences of the 12 families, commonalities across cases were assessed deductively using the four original research questions as a guide. Commonalities are not necessarily the themes experienced most often by participants; rather, they represent researcher interpretations of the most salient themes of sibling sport interactions that existed across the study sample, which in some cases were themes that parents and youth stressed as being important to their family interactions and/or youth sport experiences. A collective narrative was created to represent these commonalities, a strategy that aligns with collective case study methodology (Stake, 2005). The collective narrative was initially constructed by the primary researcher. After the student and third researcher provided feedback, the primary researcher revised the narrative into its final form.

**Research Quality**

To enhance the quality of the present study, relativistic standards (see Sparkes & Smith, 2009) were considered in five areas that reflect characteristics of collective case study research. First, interviews with study participants were constructed to be relevant to extant siblings in sport research and theory and were executed in an ethical manner. Second, the primary researcher established trust and rapport with study participants that
fostered the collection of personal and introspective data. Third, to adhere to the tenets of family systems theory and to ensure that multiple perspectives would inform the analytic process, the insights of parents and children in organized youth sport were sought. Fourth, to strengthen the interpretive process, two researchers critiqued and challenged the assumptions and interpretations of the primary researcher. Last, the resultant case narratives are grounded in participant experiences and offer an opportunity to generate many new questions about siblings in organized youth sport.

**Results**

The following case narratives provide breadth and depth of understanding regarding each family’s experiences in organized youth sport. A subsequent subsection provides a narrative for the commonalities that existed across families.

**Family 1**

Overall, this family was supportive of one another as evidenced by the amount of support demonstrated to each child by each family member in the youth sport context. Both siblings (i.e., older sister, younger sister) play soccer. The older sibling was 14 years old and the younger sibling was 12 years old. Within this family the parents are the gatekeepers of their children’s youth sport experience, by signing up their children to play and providing transportation. There exists a high level of communication between family members about youth sport, specifically when it comes to advising and coaching. As described by the younger sister when referring to the older sister: “We’re probably
Although their tones of conflict were present in this advice, the sibling relationship seems to be balanced by both warmth and conflict. As described by their father, “they help each other out … but they can be the ones arguing upstairs.” The mother added: “They argue like siblings and it’s totally expected umm but outside of our house … they got each other.” This last quote was followed by an experience that the sisters had where one of them had a piece of pizza thrown at them and the other confronted the boy who threw the pizza.

Advice from parents encompasses both athletic and academic performances. The mother in this family recalled a frequent type of conversation that she has had with the older sister about having balance in life. “You’re going to stress yourself out … you’re gonna just collapse you can’t do it … we have our issue when it comes to school and sports and making sure you find your balance.” Even though this family strives for improvement and excellence in sports, they also make an effort to keep perspective with other aspects of life that are important to them.

The parents seem to have a moderately competitive view of sport, although the older sibling feels pressure to succeed for her and her sister: “There’s kind of like pressure, I guess, so like do well in your sport … cause, like, from I guess from my parents to my little sister just cause like to me and (sibling not in study) … are really good … that’s cause he’s trying to help her be like me and her….so I guess there’s like I
guess a lot of pressure on (younger sibling) to like do well.” While the children may feel pressure to be better, they also compete with each other to make one another better. As described by the older sister, “we usually practice together … we’ll work out together to get better … So, I guess there’s like a physic like competitiveness … We’re like trying to make each other better.” Even though these siblings described competing with each other, the sibling relationship seems to be of normal closeness. They get along and help each other to a certain extent but also argue at times. Some arguments resulted from feedback and coaching in sport. Sport, however, seems to have strengthened their relationship as it has added time for activities together. As noted by the siblings’ mother, “I think it’s given them somewhere to bond … I mean it’s given them something else to bond with because they’ve already bonded as siblings but they bond over the competitiveness of the sport.”

The older sister in this family sees herself as a role model to her younger sister, perhaps an indication that the younger may be modeling the older sister, and also that the older sister looks to her younger sister as a reason to continue sport. As stated by the older sister, “I’m still playing, I guess, more of like cause I love it still like to be an example for her.” This also seems to reflect the mother’s point of view when it comes to modeling behavior:

The … middle one … who’s the older one in this study she definitely has a competitiveness to compete with her older sister as far as sports and academics, like just about anything she she’s always pushing to be where her older sister is and then my … younger one in this study, she’s definitely the one that is trying to be both of them… I guess the 12-year-
old is trying to go to the 14-year-old, but the 14 is definitely not trying to go to the 12-year-old.

**Family 2**

In this family both brothers were playing basketball at the time of the interviews, however, they also participated in other sports (e.g., golf, football, soccer) during the year. The older brother was 12 years old and the younger brother was 10 years old. Pervasive across the sibling dyad was support for one another in sporting activities. As described by the younger brother in this family, “I go to his practices and like help ... and he sometimes stays after for my practices.” While there are opportunities to show support for one another within youth sport, it seems that youth sport provided a common experience that helped build a bond between these brothers. As described by the younger brother about the older brother, “he teaches me how to like swing and shoot really good,” and “he has been a leader to me and he helps me like how to golf and like shoot well so I can become a better player.” In addition, the father noted how the boys have bonded in youth sport:

I think it’s positive cause they spend time together doin’ it, um, but we’ve done it since they were so young (laugh). I dunno if it woulda been better the other way or not to be honest, but its seems to me that it was a positive cause they are spending time together...versus playing on the computer all day long...and video games and stuff which I’m not a fan of.
The father has a high level of engagement in his children’s youth sport experience, as he has coached many teams for both kids: “I actually help … coach football for one of my sons I coach basketball for … my other son and … involved with their golf as well…” As described by the older son, “(our dad) wants to help us … like get better at our sports so he’s always like trying to volunteer as a coach when he can.”

Both parents seem to support a higher level of competitiveness in youth sport, as demonstrated by the mother: “I like the competitive more than the city league stuff because they have to win the league to get a trophy.” Competition within the family is also encouraged, as shared by the father, “I think it’ll help … playing together, at home, all the time it only makes ‘em better, so I think it’s gonna help ‘em because … they are competitive.” The older brother described this type of competition as something that motivates him to try harder so that he can stay ahead of his younger brother: “we always play one on one and stuff in basketball so it kinda makes me wanna try harder so I can still stay ahead of him.” However, the amount of competitiveness seemed to be controlled to a certain extent between siblings due to age difference, as evidenced by the mother:

we always have to remind ‘em that one is older than the other one ‘cause the younger one always wants to beat his older brother … it’s like they can’t go out and play basketball without turning it into a big game.

This level of competitiveness sometimes led to conflict between the brothers, as recounted by the younger brother, “well, we sometimes like fight sometimes but it’s like not if he thinks something is not true or if I think something is not true or something.”
Lastly, the parents in Family 2 allow the children to choose what sport they play.

One unexpected choice was for the older brother to decide not to play football in order to pursue soccer, just as the younger brother was taking up football. As disclosed by the father, “he went in when the other one came out.” As the younger sibling is still participating, the outcome of this decision on the family and sibling relationship remains to be determined.

**Family 3**

The members of Family 3 were very supportive of one another. Both children play soccer and are on the same team. The older brother was 14 years old and the younger sister was 12 years old. The parents seemed to view sport as fun and recreation. The children seemed to have a pretty normal relationship, moderately close with some arguing. However, they do seem to get along better while playing and talking about sport, which offers a bonding experience.

As noted by the mother, “they disagree on things ... but when they’re playing soccer, it’s really fun because they are there for each other … it brings them closer.” This was echoed by the father: “they will occasionally fight at home ... (but) on the soccer field it’s never like that.” The older brother stated:

> It is kind of fun to be honest. Occasionally we will tease each other or joke or things but usually we get along pretty well and most of the time we have the same position on the field and are in usually the same time so that’s always lots of fun and sometimes we try to set each other up for goals and it’s been a lot of fun … but I think when we’re on the soccer
field and playing soccer together, I think we get along much better usually
and we have a better time.

The siblings in this family are somewhat competitive in sport, but also work
together, which strengthens their relationship and increases their motivation in sport. This
interpretation is evidenced by the father, who stated:

I think it they push each other a little bit, uh, so I think um as (older brother) sees
(younger sister) excel and vice versa that they kinda want to be stronger
themselves and be a little better and …so … they build off each other. I think they
encourage each other and want to … both participate, and so, if anything, it will
strengthen their desire to play more and uh, yeah, I haven’t seen anything
negative that way that would decrease that.

The younger sister seems to be more competitive in sport than the older brother,
having played in a competitive league, whereas the brother played recreationally.
However, after seeing her brother play and enjoy his team, she decided to play
recreational soccer and found that she enjoys being on the same team:

I watched one of their practices and I just wanted to be on try and practice
with them and it was really fun so I joined with them … I want to continue
playing soccer for as long as I can be on his team because I like working
with him.

It seems, therefore, that as a result of the siblings’ enjoyment of participating together,
they’ve come to enjoy working together in sport. As shared by the older brother:
On the field, we’re at least trying to work together … Usually on the sidelines there will be a little bit of friendly fighting like squirting water at each other and such but otherwise I think we usually get along with each other pretty well. We both always look forward to practice and to games and things just typically we have a lot of fun.

In addition, the older brother also shared how he and his younger sister work together on the soccer field.

If one of us gets into trouble, the other one will just kind of help come out and get us out of that sticky situation or if the other one is open and we are coming into a lot of defenders, we will just kind of get it to the other one so that they can have a chance to go on and score that goal or just kind of helping each other out and I think has helped us a ton.

And as shared by the younger sister:

On the field, we talk to each other and plan out what we’re going to do, and yeah, we like to make at least two plans and just in case one goes wrong … during breaks when we’re both out, we talk about what we’re going to do.

Conflict was also reported in this sibling relationship, both outside and inside youth sport.

The older brother stated that:

we occasionally have little fights at home … once in a while we will take an opportunity to shoot when the other was wide open and things like
that, but I think we will start taking those opportunities and get along better, and less of those fights on the sidelines.

However, the older brother also noted that he has made a conscious effort to fight less, resulting in getting along better in and out of youth sport:

Just recently, like probably within the past year or so realized that I spend probably a little bit too much time fighting with her and so I’ve been trying to fight a little less and let those little things go and I think that has helped us to get along better and that helps us to have a better time when we’re playing sports.

While it seems like the siblings make a conscious effort to support one another in youth sport, the parents show support to the children as well. This was evidenced as the older brother reflected on his parents’ treatment of the siblings:

I think they are both trying to give her as much support as they can, and they do the same thing with me. I think they encourage us to practice together and spend more time playing soccer together and I think that is kind of, that enthusiasm towards us playing soccer from them has kind of influenced her to keep on playing soccer and I think that helps her to have more fun just knowing that they’re just there cheering her on … I think that’s great because I know she has a lot of fun, I know I have a lot of fun at the same time that she is. Personally, I love it when my parents are cheering me on, on the sidelines and I am pretty sure that she loves it the same way, so I think that is just good all around.

This was also picked up on by the younger sister:
They have always um supported him and been at all of his games … I like it because it um it’s um it’s made me want to do the same thing … my parents have been doing the same thing for me too.

Family 4

Within Family 4 both children participate in Karate. The older sister was 12 years old and the younger brother was nine years old. The parents seem to have a positive and non-competitive view of youth sport. At one point, both parents participated in the same sport as the children. These parents seem to have a very close and equal relationship with their children. The father emphasizes ensuring that the children actually want to attend, while the mother, at times, seems to have to encourage the children to want to go to practice. The siblings are very close with each other. Everyone but the older sister acknowledge that the siblings are very similar. The siblings shared a room and most activities for their whole lives. Playing sports only seem to strengthen this relationship. Because of this strong relationship, they want to engage in the same activities and it gives them motivation to participate.

This family is very supportive of one another. They communicate regularly and provide a high amount of emotional support. Whether it is in youth sport or outside of youth sport the sibling relationship can be best described in terms of warmth and friendship. As stated by the mother, “they are always encouraging each other and lifting each other up and they love playing together and doing things together and sharing, they’re like … best friends.” In addition, the younger brother reported, “well sometimes
we work as partners, sometimes we don’t get the chance to … and well and you know we do very good with each other.”

In most cases individuals, outside of the family unit, think that these siblings are twins, which, in some cases may be linked with the close relationship that exists among this sister-brother sibling dyad. As noted by the father “people think they’re twins but they’re not, they’re really good relationship they do everything together that’s what they’ve been in the sports together too.” In addition, the younger brother also points out the similarities between he and his sister, “well it’s kinda like looking in the mirror, we know the same things, and we um get taught the same things and we just basically know how to do it together … it’s like we read each others’ minds kind of.”

The similarities and positive relationship between the two children seem to be a motivating factor to continue sport participation as stated by the older sister, “well whenever I see my brother doing karate, sometimes he would do um like things better than me and it would just encourage me to do as good as him.”

Finally, there does not seem to exist any type of competition between these siblings or even in the sport context, as confirmed by the father, “They have tournaments but they haven’t wanted to do them.” Instead of competing in tournaments, this sibling pair like to push themselves to improve beyond what they were able to accomplish in the past.

**Family 5**

Overall, parents and children seem to get along well in this family unit. The siblings in this family play different sports. The older sister, who was 12 years old, plays
soccer and volleyball and the younger sister, who was nine years old, plays basketball and softball. The parents encourage their children to participate in youth sport as a way to have fun and learn. In order to support their children in youth sport, the parents try to spend an equal amount of time with each child, which is noted by the older sister in reference to the amount of time spent with the younger sister, “they support her and they usually do about the same … I have probably more games than her so they come to more of my games than hers … but they still go to most of hers.”

In addition to supporting each child in their youth sport experience, these parents support their children in choosing their own unique sport participation experience. According to the mother, “They all have their own thing … it’s good for them in their identity to know that they can be their own person.” In addition, the father, speaking about his younger daughter, said that he is “trying to help her find something that she could call her own.”

Being able to pick their own sporting experience seems to be something that helps the sisters get along well. When speaking about their relationship and youth sport experience the father said that they are “really good friends in terms of sports…they each kinda have their own sport and don’t seem to overlap.” The mother added that “if they participated in the same sport there may be some competition but that hasn’t been an issue for these two.” This seems to result in a lack of competition between sisters according to the mother “there’s not any kinda competition.” In addition, it seems like having less competition may be something that the younger sister enjoys according to the older sister, when referencing her siblings’ youth sport environment, “it’s fun to watch
her because like it’s not competitive so it’s not like super-fast and super competitive stuff.”

Even though they are not competitive and seem to get along well in youth sport, outside of youth sport their relationship has moments of conflict and warmth. According to their mother, “they’re sisters some days it’s a love/hate situation but they generally get along…they’re siblings with a regular relationship.” This theme is reinforced by the father as well “ya know they get along pretty well umm but ya know they’re the same sex so these two little girls sometimes get on each other’s nerves. And when asked about the effect of youth sport on the sibling relationship, the younger sister said “I don’t think it really has anything to do with sport.”

Within youth sport this family emphasized the importance of supporting each other. According to the father, “when they’re competing they have the support of the other and the whole family.” In addition, the mother said, “they practice things together like we’ll go play basketball and (older sister) will help (younger sister) or ya know they support each other at the activities at the games, but also in practicing and playing at home.” Even though they support each other the older daughter would like the younger sister to play soccer like the older sister does, “so she used to play soccer and I would kinda wish she kept playing soccer ‘cause I could like help her.” And while the older sister may want her younger sister to play the same sport, the younger daughter seems to want to choose her own path testing out the same sports that other family members have played (i.e., father/basketball, mother and older sister/soccer) and moving onto other
sports that interest her. According to the younger sister, “I do softball and basketball, and even when I was little I did soccer (mom and older sister).”

This venturing off and process of choosing a different sport has also caught the attention of the older sister and has peaked her interest in a new sport,

I never really thought about softball until she (younger sister) started playing … I liked it but I watched my cousins play it, but it was competitive and it was different and … kinda looked like fun but like kinda difficult … and I have some friends that play softball and they really like it. Even though the older sister was interested in softball by watching others participate, it seems to be that her younger sister’s participation is influencing her to consider softball as a new sport.

Family 6

Within this family the brother/brother dyad participate in different sports. The older brother was 14 years old and the younger brother was 12 years old. The older brother plays football and the younger brother plays soccer. Within this family parents report a high level of involvement. According to the father, “A lot of times I’ve coached my kids on their little league teams. I try to be there for them in every game. If they have any questions about what’s going on with their teams I help them with that.” While the father helps coach, the mother helps the boys get involved with the sport that they choose. However, as the mother reports these two siblings seem to have different levels of motivation to participate, “with (younger brother) it is a positive thing (younger brother) really wants to play these sports … (younger brother) asking me to play these
sports … (older brother) I have to go to him and ask if he wants to play and sometimes he’ll say eh I don’t know but that’s just more of his his personality … when he is playing that sport, he has a lot of fun … but he takes bit more … coaxing … like he doesn’t really come to me and say hey there’s this sport I wanna play it, I have to say (older brother) there’s a sport, do you want to play it … and more often than not he’ll say sure.”

In addition to this high level of involvement, the parents also emphasize to their children that they can’t play all the sports they want because some sports overlap in seasons. According to the father, the parents said to the younger son, “you do one or the other, and he chose soccer.” This encouragement to choose between sports and the younger brother actually choosing to play a different sport than the older brother seems to have resulted in conflict due to sport choice. As stated by the father,

so there’s a little tension with, ’cause younger brother decided not to play football this year, he’s played in the past but instead he’s playing soccer and (older brother) doesn’t like soccer. So sometimes he would kind of bash on soccer, which (younger brother) would retaliate.

According to the Younger Brother “Sometimes we don’t agree on like soccer or lacrosse to play and stuff. Like he doesn’t really like soccer that much. So, me and him can like kind of fight over what’s better.” When the younger brother was asked how this affects him, he said, “It doesn’t really affect me.” In addition, the Mother of this family reported on this conflict due to sport choice, “(older brother) he’ll say oh you need to play football. Football’s for men, ya know, soccer’s a sissy sport … (younger brother) defends himself…. …”
Even though conflict exists because of sport choice, these brothers still bond and have fun with each other through their sport participation. According to the younger brother, “I think it’s fun, like practicing with him outside like football and just throwing the ball around. And like playing basketball, playing some games with him. It’s fun.” The older brother also looks forward to this type of relationship continuing into high school, I think that as we play together, like in the high school level if we can, it might be…I don’t know. If he plays football or if he plays lacrosse or basketball even, I think that will help us maybe push each other, but I think we will actually become closer too. Because sports can get us closer in the future.”

When asked if this is something that has already happened with sport, the older brother said, “Yeah.” This type of bonding and support is something that seems to be behavior that the parents model. According to the older brother when referring to his parents support of his younger sibling, “They go to most of his games…They help him practice sometimes in the backyard playing soccer, playing football, playing lacrosse, whatever sport we happen to be playing at the time, so I think it’s good.”

Another behavior that is reported in this family is modeling. According to the father when referencing his younger son potentially playing football:

I think (younger brother) now wants to play, cause soccer in high school is in the spring, and so he could do football you know so I think he will be playing football again because of his relationship with (older brother) … I think that helps, watching his brother.”
This modeling behavior is also reported by the younger brother about his older brother following their father, “He kind of just follows onto my dad. Like he’s been playing football for a long time, and my dad kind of like pushes him to do it, but he enjoys it every year.” However, the mother also reports that “at times (older brother) will look to (younger brother) even though he’s the younger sibling,” and that sometimes “(younger brother) takes on more of a leader role.”

**Family 7**

Overall, this family gets along well. There have been moments of warmth and conflict. The older brother was 12 years old and the younger sister was nine years old. The older brother has decided to play basketball and the younger sister plays soccer. The sibling relationship seems to be normal. When describing the sibling relationship, the father states that: “They have their moment where they’re best friends in the world and help each other out a lot. They have their moments too where they’re mad at each other for different stupid things because that’s what siblings do.” When taking youth sport into consideration, it was reported that the siblings used to play the same sport. When they played the same sport, there was more tension in their relationship. However, when the older brother chose to go a different route and choose to play a different sport, the positivity in their relationship increased while negativity seemed to decrease. According to the mother, “But once they weren’t playing the same sports, their relationship was a lot better.” In addition, the father stated, “I’d almost say sometimes as siblings, they like to have different sports a little bit so that they’re not compared quite as much. ‘Cause I feel like sometimes there are some emotions like that.”
This type of comparison in youth sports, between siblings, seemed to be a common theme reported by the parents when referencing the older brother in this study. According to the mother, “I don’t think he liked feeling like she was better than him … he doesn’t want to compete with her (younger sister).” In addition, the father added, (Older brother) siblings on both sides of him were a little bit better at soccer than him and it made it seem like at a certain point it made him actually lose interest because he felt like he wasn’t participating like he wasn’t doing as well in this sport as them, so he started looking for other things that he was interested in.

When asked to expound on this thought the father shared the following:

Yeah, so his older brother (not in study) and younger sister (in study) both play on a little bit more competitive teams and do well. They just are a little bit more competitive as far as the other kids on the field, they do just as well at passing the ball or rolling the ball, things like that. Scoring goals or protecting the goals, both of them tend to play a little more on the defensive side and do really well. (Older brother in study) gets beat a little bit more by other kids that are his same age, so not necessarily by his siblings. He can beat (younger sister in study) usually when they’re playing soccer against each other instead of playing head on head. But when it was kids his own age, a lot of the times he was the one getting beat kids were dribbling around him or scoring on him and things like that. It seems like he just decided that he wasn’t having as much fun or doing as well with it. And just didn’t like it as much. So, like some of it has to do with the team too. Some teams it feels like kids really enjoy, they mix really well with their teammates and their
teammates are really supportive of them. He ended up on a soccer team that the kids weren’t as nice to him. The coaches were fine with him, but some of the kids weren’t as nice to him and he didn’t enjoy it and just started getting less interested in it and decided he didn’t want to play soccer anymore.

When asked what sport he has gravitated to now, the father suggested that he had "shifted more towards basketball. He likes basketball a little bit more now. And he seems to be more suited to it too. He likes it a little bit more for sure.”

The parents also note the differences between the siblings. Specifically, when referencing the older brother, the mother explained:

He's more of a jump first and ask questions about it later and sort of learn from what you’ve experienced. Where my husband and I are more think through things and decide the best possible course for how to do things. So, he attacks sports the same way and just sort of starts participating without knowing if there’s a method for what he should be doing. Anyway, because of that, we have a hard time understanding why he does things the way that he does. So sometimes we are just exasperated with him. “Why would you do it that way? Why wouldn’t you do it the way your coach asked you to do it? Or why wouldn’t you do it the way the other kids are doing it?” Umm, but overall, he's a really happy, resilient kid, so it’s fun to watch him participate in stuff, even if he's making an absolute mess of whatever they are trying to accomplish, just because he's having such a good time.

And when referencing the younger sister, the mother explains:
With (younger sister), she’s very competitive and is fun to watch her get out there and not be scared of kids that are bigger than her or kids that have more skill than she does. She’s just a little bit fearless that way. It’s kind of like a proud mom moment to watch her do that because I don’t know where she got that from. I’m a little more timid about stuff like that so, umm, I admire her for that. Our relationship overall is good as far as youth sport is concerned. She participates well, and she listens well when we have something to add to what her coaches have to say.

The mother also noted about her children in this study that “they both take coaching very well.” Currently, when youth sport is discussed, more warmth is reported. The father reports that when the older brother attends the younger sister’s games that he will, “just cheer loud for her when she accomplishes something and just that kind of basic sibling thing.” The mother, when referencing the younger daughter, states that “she loves having him there.” The younger sister also reported that:

“sometimes he comes out and helps me practice for my soccer games … I like it when he comes out and helps me … it’s helped me a lot and it influences me to try harder … I think I’m gonna get a lot better with his help.”

The older brother reports that his sister has influenced him and helped motivate him to try harder in youth sports “it’s helped me a lot and it influences me to try harder.” He also noted that “Well if my younger sister can do this, why can’t I? So I try harder to do things.”

Family 8
Within this family, the older sister participated in gymnastics and the younger brother participated in taekwondo. The older sister was 12 years old and the younger brother was 10 years old. This family reports a lot of warmth in the sibling relationship and friendship among the siblings. According to the father, “they get along great…they’re like best friends, um, always constantly doing things with each other, helping each other out. Um yeah I think yeah they get along really well.” The mother also said that, “they’re actually very close.”

This type of relationship is helpful to when the older sister is having a tough time in youth sport. According to the older sister, “when I’m scared to go to a meet he would help me feel better about it.” As the siblings support one another in their youth sport activities it also has become a source of motivation as reported by the younger brother, “I think my sister doing gymnastics has sometimes wanted to make me work harder.”

When asked about some of the experiences that indicate that the siblings get along well the father shared the following experience:

Well I think um just the fact that at home, after things are done, when they get have an opportunity to play together they’ll take turns uh on deciding what they want to play and it’s kinda fun to watch sometimes cause they’ll kinda take turns teaching each other things what they’ve learned, in particular with their sporting event, so (older sister) will get (younger brother) to do cartwheels and things like that that she’s learned in gymnastics and then you know (younger brother) will get (older sister) to do some martial arts technique kicks and strikes and things like that and they’ll just laugh and have a great time with it even though they’re
not very good at each other’s sports, but you know they still try and they have a good time doing it. Um and just in general though they’ll usually always try to find something that they each other wants to do so they continue to play together so.

In addition to what the father shared the mother in this study shared a little more detail about the interaction between the children, “they do their own version of what they call ‘taikwonastics.’ And so, one of them will pretend to be the teacher and teach the other one something and then vice versa.”

**Family 9**

Unlike the other sibling dyads previously noted, only one of the two siblings interviewed participated in a sport. The older sister in this family was 12 years old and the younger sister was nine years old. Within this family the older sister dances and the younger sister does not participate in a sport, which has been attributed to chronic health issues. The siblings in this family seem to get along very well and are supported by the parents. Even though the siblings get along well, the mother reports that it could be closer, but that age and maturity might have something to do with the level of closeness that is experienced between the two. As stated by the mother,

They seem to have um a pretty good relationship. I think age right now is a little bit you know certain times like different ages there’s more of a gap … and I think (younger sister) a little younger now where (older sister) been maturing and so they’re not as close as they always have been or they’re not as close as maybe I would like them to be, but they don’t fight, they don’t, they just have differences
right now you know so but I mean as for just on a regular day they get along, I would say probably better than most siblings.

The father’s comments also reinforce this point:

I would say they get along. They are sisters. They are both musically inclined but (younger sister) because of her age and maturity level, I would say (older sister) is quite mature for her age so she tends to gravitate more towards her older sister’s interest, whereas (younger sister) still plays with dolls. So, they have a good relationship overall, but I wouldn’t say that they spend a lot of time together because of their age and interests are different.

When it comes to youth sport, the siblings seem to have a good relationship and support each other in activities that they have participated in. According to the older sister when speaking about the younger sister, “So she’ll come watch me, like on my competitions and we’ll have fun like in the kitchen dancing and stuff but...yeah, so we go to each other’s stuff and just have fun with it...” The younger sister when reporting about the older sister says “she lets me watch her when she practices and stuff.” As a result of their support and bonding when referencing youth sport, the older sibling has a chance to teach the younger sibling. This type of bonding and support increases the positivity in the sibling relationship according to the older sister, “it makes us become stronger and just like closer as sisters.”

However, even though the siblings bond through dance, the parents continue to try to help the younger sibling find her niche in youth sport. According to the mother they are, “...trying to find out what her real true love is...” and the father reports, “So we are
just kind of letting her be her own person and figure out what she is trying to do.” While the older sister seems to have found the sport that she enjoys the most, the younger sibling is still trying to find what she enjoys the most. One obstacle that is in the way of the younger sibling is her physical disability. Father, “(Younger sister) is not currently involved in any sport, but with her, she has arthritis, and so she doesn’t participate right now in any sports.”

**Family 10**

Similar to Family 9, only one of the brothers from this sibling dyad currently participates in youth sport. The older brother was 12 years old and the younger brother was nine years old. While the older brother plays soccer, the younger brother looks forward to one day participating in youth sport again. Due to issues not related to health, the younger sibling was not participating in youth sport at the time of the interviews. Within this family, the parents get along well with the children and the siblings tend to have a normal sibling relationship. However, it should be noted that the brothers grew up in a different country with a different culture regarding family roles. Specifically, in the siblings’ country of origin it is common for the older brother to be in charge of the family when the father is not present. In this family, the father is out of town quite a bit due to his job, so the older brother had to get used to not being in charge of the family. Before learning about American culture, the father reported that the older brother, “literally… would say that – I’m in charge” to his siblings and the role was reported as, “you do what I say role and that is basically their relationship.” However, the mother reported that both warmth and conflict exist in this sibling relationship. As shared by the mother:
They have a love hate relationship um sometimes they get along really
good and other times they don’t so (older brother) is definitely getting in
that you know teenager state and so (younger brother) bothers him more
often than not so he just needs more space and just you know normal
teenage behavior and (younger brother) doesn’t quite understand that yet
so um it makes him a little bit more sad, but overall they get along pretty
well um (older brother) definitely looks out for his brother. He would tell
you different probably, but he does and he’s a good big brother so but
overall, I would say they have a pretty good relationship.

It seems that this relationship has been affected by youth sport. Even though only
one sibling participated in organized youth sport at the time of the interviews, these
siblings would still play sport together at home or outside of an organized youth sport
context. The parents seem to recognize youth sport as something that helps the brothers
bond. According to the father, “That probably has strengthened the relationship between
the two if anything. The youth sport has probably helped a lot in that area because they
will both go out and kick the soccer ball around.” The mother also reported:

I think it’s been a good thing because um a lot of times especially over this this
last summer, (older brother) would learn new tricks, and (younger brother) would
go outside with him and so (older brother) would kinda try to show him these new
tricks and things and you know just kinda tell (younger brother)… “when you get
on your team you know maybe you could try this” or you know so they go outside
and just try new moves or they would sit out there and just play basketball
together or you know just different things as far as just even sport stuff that they had both learned so which was good. They’d even throw baseballs back and forth to each other or just you know so I think it’s good it gives them good bonding moments you know between each other so.

In addition to bonding in sport, the younger sibling reports an increased desire to participate in youth sport because of his older brother, “he’s a really good player … he’s really good at his position … I think it will make me want to play more sports.”

A possible link to this increased desire to participate is the support that the brothers receive from their parents. According to the younger brother, “I still think that’s great since we both get to play sports … they’re fair to both of us and they take us wherever we need to go.”

While both parents support their children in their desire to participate the father reports one reason why he supports his sons in youth sport, “They are vital in the upbringing of children.” In addition to the support that the parents give to their children, they also have standards that the brothers need to meet as they participate in youth sport, which the brothers look at as a chore that is fun. According to the younger brother:

and um when he played baseball once before and … me and him would go out and practice since we had it as sorta like a chore that we had to do regularly … um every day um we get along pretty well um with sports sometimes I help him practice soccer. Since I uh didn’t play baseball this um summer I didn’t have to practice baseball um so we get along pretty well.
When asked what he thinks about this type of practice/chore the younger brother said, “um it’s pretty awesome. We both have fun.”

The older brother shared a similar type of experience when addressing what they are asked to do, by their parents, as part of their sport participation.

Well my parents they’re kinda like have me practice a lot at home ‘cause they know I want to play like soccer when I get older and stuff and so they’re kinda like make us not like make us but they tell us like to play, me and my sibling.

When asked if his parents do something similar with his younger brother, this older brother stated, “yes they kinda like we kinda like practice at home for 20 minutes every day … it’s kind of a chore or something” And when asked what he thinks about this, the older brother said, “…it’s like pretty fun, helps a lot”

Family 11

The siblings in this family are similar to Family 9 in that the older brother participates in sport and the younger sister does not participate in a sport due to health issues. The older brother in this family was 12 years old at the time of the interview and the younger sister was nine years old. At the time of the interview, the older brother was off-season with sports, but usually participates in a variety of sport which include, soccer, basketball, and flag football. The parents in this family seem to be close to their children. In addition, according to the parents, the children seem to have a typical sibling relationship. As stated by the father:

I think that they’re pretty close in terms they like to play with each other when they can make believe toys, things like that. They don’t play sports a lot together.
They run around and tumble and those types of things, but (older brother) realizes that (younger sister) is limited in keeping up with him and he does like more competitive interaction. They enjoy one another’s company, but like brothers and sisters they get after each other. Some of that is a function of preference, and some of it is just brother and sister stuff. I’d say they are towards each other, but they’re also in a phase where I think they would be common -- it would be common for you to ask one or the other what they think of the other and they’d say, ah he stinks, or oh she’s a dork, she’s annoying. They’re in that space there where there’s kind of a balance given, whatever day it is of love and hate that they show towards one another.”

The mother shared a similar report about the siblings’ relationship, “they get along pretty well … I mean he picks on her a lot but … well … they’re pretty friendly with each other.”

In addition, the children also report both feelings of warmth and conflict within the family. Within youth sport the younger sister reports some conflict between the older brother and parents. According to the younger sister, “he always gets grumpy with them because he wants to do flag football and I mean I don’t know kind of fight?” According to the younger sister when referring to her older brother’s comments towards her about youth sport, “I’m more better than you.” Which she reported that those types of comments “makes me really sad.”

The older brother likes to play with his younger sibling but also admits that his younger sister quits a lot when they compete against each other. According to the older
brother, “Well she’s fun to play with like pass, but when we play like football, down set hike, when I start running, the second I get past her she knows she’s never going to be able to catch me so she just stops.”

However, because the younger sister in this study has a disability, the parents seem to give her special attention. Even though she does not participate in a youth sport like her older brother and other siblings, she does have her own activity. According to the younger sister, the attention that she receives from her parents and the special activity that she attends has become a source of tension between her and her siblings. As stated by the younger sister “actually all my siblings wish they could do that and when I was talking something that I felt sad about she’s my (older sister), she’s like “Well mom takes care of you and takes you to (special activity) and takes you to all these hospital appointments and I don’t feel good about it and you come home with prizes and stuff” I don’t feel good about those appointments! It’s not that fun.”

Even though the siblings report feelings of jealousy and conflict, they also report support for one another and having fun with each other. According to the younger sister her older brother’s sports are a “good thing ‘cause I want him to have something that he can do.” However, it seems that more fun is reported when not in youth sport. According to the older brother, "It’s fun. It’s fun to play with her."

**Family 12**

Within this family the parents report being supportive of the children and their desire to participate or not participate in youth sport. The older sister was 12 years old and the younger brother was 10 years old. The older sister participates in volleyball and
basketball and the younger brother does not participate in youth sport due to his level of anxiety when playing in front of people. However, he really loves playing sport when he is participating with his older sister. In fact, both parents report on athletic experiences that the siblings enjoyed and bonded over together. As stated by the father “think when we were doing the running, it actually brought them together pretty well because they kind of enjoyed it and would sometimes be a little competitive with it but have fun with it."

The mother also reported:

Oh I think it’s been great, they in fact when we play together that has been a really good bonding experience I think for our family and then um although there is fighting (laughs) when they think something’s not fair or when they did something to the other person you know and um bothered um. And for the most part it’s been fun and they want to do it again and again, you know, when they get together and even if it, if it’s, just the two of them out playing just shooting baskets and stuff they enjoy that too and so yeah.

In addition to the bonding the sibling relationship has been reported as normal. According to the father, "Well they are probably pretty normal. They fight constantly, but they can also get along quite well if they are not fighting."

Even though the siblings have moments of conflict and moments of warmth in their relationship, they tend to report more warmth between each other when participating in a sport activity. As described by the older sister “he’s a good playing partner and I’m lucky to have him around because he’s um he really good help with all my sports too.” In
addition, the younger brother reports about watching his older sister participate in youth sport and how it may affect his future participation in youth sport. As reported by the younger brother, “well and it probably will make me want to play.” And when asked why, the younger brother said “because it looks fun.”

Common Themes among Families

In order to assess the similarities among the families that were interviewed, common themes were organized into nine postulates. These claims help us understand how families who are similar and different across sport participation group, dyad biological sex composition, and dyad birth order, operate similarly within a youth sport context. Knowing that multiple families are similar across postulates helps generalize findings to the families within this study and extend these findings in the form of potential hypotheses to families units outside of this study.

There were many commonalities among the 12 families interviewed. These commonalities are identified in the subsequent section using comments and quotes to highlight reoccurring themes. Quotes, have been used in the family case narratives, but are showcased again (in full or in part) in this section to highlight commonalities across family units. A number of salient themes emerged across family units, leading to the following nine postulates: (a) warmth and conflict can, and do, occur simultaneously, (b) sport is a context where siblings bond, (c) parents want and encourage their children to choose their own sport path, (d) older siblings recognize that they are models for their younger siblings, (e) family members give each other advice in youth sport whether the receiver wants it or not, (f) families generally view youth sport as a context that should be
competitive, (g) siblings motivate each other to participate in youth sport, (h) sibling influence is not only a top-down process, and (i) parents serve as gatekeepers for youth sport participation.

Postulate 1. Warmth and conflict can, and do, occur simultaneously. As the mother in family 11 described it, “um they have a love hate relationship um sometimes they get along really good and other times they, they don’t.” While it does not apply to all youth who participated in this study, it seemed like the majority of youth may have been hesitant to report negative behaviors displayed by or towards a sibling.

Postulate 2. Sport is a context where siblings bond. As stated by the father in Family 10 when referencing his children participating in youth sport, “That probably has strengthened the relationship between the two, if anything. The youth sport has probably helped a lot in that area because they will both go out and kick the soccer ball around.” It should be noted that families that had one sibling who participated in organized youth sport and the other sibling did not participate in an organized setting, sport-type free play was still an activity that they participated in together at home or other times outside of an organized youth sport setting.

Postulate 3. Parents want and encourage their children to choose their own sport path as explicitly emphasized by families 5 and 9. This particular pathway of influence was not expected but helps to look to another reason why siblings may differentiate in youth sport. As stated by the mother in Family 5, “it’s good for them in their identity to know that they can be their own person.” This quote demonstrates that differentiation in an achievement context such as sport, may be influenced by parents in some cases.
**Postulate 4.** Older siblings recognize that they are models for their younger siblings. As noted by the older sister in Family 1, “I’m still playing I guess more of like cause I love it still like to be an example for her.” In addition, the younger sister referring to playing with her older brother in Family 3 noted, “I want to continue playing soccer for as long as I can be on his team because I like working with him.” Modeling was also something that the older sister in Family 5 expressed a desire to do, “so she used to play soccer and I would kinda wish she kept playing soccer ‘cause I could like help her.” However, modeling was not only reported as top-down from older to younger sibling, hints of modeling behaviors were noted as the older sibling looking to a younger sibling as someone to follow. According to the mother in Family 6, “at times (older brother) will look to him (younger brother) even though he’s the younger sibling.” Lastly, modeling behavior was noted as a process from parents to child. According to the younger brother in Family 6, when referencing his older brother, “He kind of just follows onto my dad. Like he’s been playing football for a long time, and my dad kind of like pushes him to do it, but he enjoys it every year.” It seems that modeling behaviors have multiple pathways of influence.

**Postulate 5.** Family members give each other advice in youth sport whether the receiver wants it or not. In Family 3, advice usually seemed to be welcome in the sport setting. This was also demonstrated by the younger sibling in Family 1 when referencing the advice that she gives her older sibling is usually resisted at first, “but she does always do it in the end which is very annoying know that I won’t have credit for helping her…but in the end it’s like it’s fine.” Other siblings noted how they communicate with
each other in youth sport by working together as rehearsed by the younger sister in Family 3:

on the field we talk to each other and plan out what we’re going to do and yeah we like to make at least two plans and just in case one goes wrong … during breaks when we’re both out, we talk about what we’re going to do.

In addition, parents communicate and give advice to their children. This advice can be seen as something positive by the children and other times it may seem to communicate pressure. As described by the older sister in reference to her younger sister and parents “There’s kind of like pressure I guess so like do well in your sport.”

**Postulate 6.** Families generally view youth sport as a context that should be competitive. According to the mother in Family 2, “I like the competitive more than the city league stuff because they have to win the league to get a trophy.” In addition, some parents noted that being competitive can contribute to improved sports performance and can be a positive force between siblings. As mentioned by the father in Family 3:

I think it they push each other a little bit uh so I think as (older brother) sees (younger sister) excel and vice versa that they kinda want to be stronger themselves and be a little better and us so they build off each other.

This same notion of competition making each other better was echoed by the father in Family 2, “I think it’ll help...playing together at home all the time it only makes ‘em better, so I think it’s gonna help ‘em because they’re they are competitive.” This idea of healthy competition reinforces the thought that “Iron Sharpens Iron.” Meaning that as
younger siblings’ practice and compete against older siblings, younger siblings end up being better.

**Postulate 7.** Siblings motivate each other to participate in youth sport. Some siblings were motivated to continue participated in youth sport because of how well they got along with their sibling. As noted by the older sister in Family 4, “well whenever I see my brother doing karate, sometimes he would do um like things better than me and it would just encourage me to do as good as him.” In addition, the younger brother in Family 8 reported, “I think my sister doing gymnastics has sometimes wanted to make me work harder.” And in cases where one sibling does not participate in youth sport, siblings still hold the potential to helping them participate. The younger brother in Family 12 explained in reference to his older sister playing sport, “well and it probably will make me want to play … because it looks fun.”

**Postulate 8.** Sibling influence is not only a top-down process. In fact, younger siblings in this study showed the potential to influence older siblings’ youth sport participation, experiences, and outcomes. As reported by the older sister in reference to her younger sibling in Family 5 reported, “I never really thought about softball until she started playing.” And as noted in the modeling subsection, sometimes the younger sibling can take on more of a leadership role and older sibling will be influenced by them.

**Postulate 9.** Parents serve as gatekeepers for youth sport participation. While not included in the main dialogue, parents played a key role in youth experiences in sport. In each family, parents provided a variety of levels of involvement. Some parents were very involved in their child’s sport lives while others played more of a supportive role. Some
of the ways parents were involved in their child’s youth sport experience was by being involved in the actual sport themselves as demonstrated by Family 4, where the parents also participated in Karate. Other parents took on the role as coach and trainer, as noted by the father from Family 2, “I actually help, uh, coach football for one of my sons I coach basketball for my other son and uh involved with their golf as well.” However, the majority of parents were gatekeepers to sport and described themselves as chauffer’s, financer of activities, the one who signs them up, and providers of support.

**Discussion**

The present study was designed to highlight how specific family processes affect the perceptions and experiences of the individual athlete, the sibling dyad, and the family as a whole. The data gleaned from interviews with 48 participants across 12 families explicate the subjective experiences of each family system, as well as the shared and non-shared characteristics of youth sport participation across families. It therefore represents an important research step as scholars and practitioners aim to learn more about the family’s role in siblings’ youth sport experience.

By taking into account wholeness and order, we are able to see ways that family relationships and processes influence sibling warmth, conflict, and motivation to participate in youth sport (see RQ1). As we consider each family relationship and how they affect each other within this youth sport context, we expected that in families where greater warmth was reported, we would find greater warmth in the sibling sport
relationship. Consistent with past research, families in the present study reported both warmth and conflict within the sibling relationship in organized youth sport (Davis & Meyer, 2008). Specifically, it seemed that siblings who had warm relationships felt that it encouraged them to continue participating or to begin participation. This reflected findings from Fraser-Thomas and colleagues (2008), who found that siblings who continued to participate in youth sport experienced positive feelings in their sibling relationships. In addition, we also expected that families that reported greater conflict would also demonstrate greater conflict in its constituent sibling relationships. While this presupposition was supported, families and siblings who expressed varying levels of conflict did not seem to have youth that were deterred from playing a sport.

When examining the factors that have the potential to contribute to sibling modeling and differentiation in youth sport (see RQ2), relational warmth emerged as an important construct. It seems to follow that in some relationships where siblings report warm relationships, both modeling and differentiation among siblings can exist. This points to past research evidence suggesting that modeling and differentiation are orthogonal (Whiteman et al., 2007, 2010; Whiteman et al., 2013). In the present study, warmth appeared to be a part of the sibling relationship regardless of whether interactions occurred inside or outside of youth sport. This is in line with the extant family literature, which suggests that sibling relationship warmth may act as a potential predictor of modeling behavior (Slomkowski et al., 2001). Importantly as we consider the family systems tenet of hierarchical structure, we see that sibling sub-systems, while they are examined on their own, belong to the whole family structure and can be influenced by
other sub-systems. Specifically, some parents encouraged children to choose their own path. This type of encouragement between the parent-child has the potential to affect the sibling dyad especially if one sibling wants to participate in the same sport, as reported in Family 6.

In the present study, many siblings and parents who reported differentiation behavior noted that relational warmth was only established after one of the siblings chose a different sport. This was evident in Family 7, as the older brother chose to play a different sport than the younger sibling, in part to differentiate and reduce competition with his siblings. As a result of this child changing sports, the family reported less conflict and warmer relationships among the siblings that participated in the study. This and other similar results lends itself to differentiation theory (Ansbacher & Ansbacher, 1956) in that in order to reduce competition with a sibling, one sibling chose a different niche, resulting in less competition with his sibling and greater feelings of warmth within the sibling relationship. This also falls inline with the family systems tenet of feedback, in that families who welcome change and others do not. However, it seems that when conflict exists within sibling relationships, families were more open to change.

When addressing how parent-child relationships affect sibling relationships in youth sport (see RQ3), we did not find evidence of parent differential treatment or sibling jealousy. Parent differential treatment (PDT) has been identified as a parenting behavior that has the potential to affect siblings in a variety of ways (see Jensen & Whiteman, 2014; Meunier, Bisceglia, & Jenkins, 2012). Despite the expectation that parents’ differential treatment could lead to outcomes such as externalizing behaviors, jealousy,
and adjustment, no children in the present study \((n = 24)\) reported that they were jealous of the way their parent(s) treated their sibling(s) in youth sport. However, one child did report that her siblings were jealous of how she was treated outside of youth sport. In addition, one parent mentioned anecdotally that if we had included another older sibling within the family, the conversation would have been different. The irony in this comment lies in the fact that the parent reported that out of all the children in the family, the one that would have complained is the one who has had the most time and resources spent on her youth sport participation. No externalizing behaviors or adjustment issues were reported as a function of the parent-child relationship. In one family, the parents reported spending a higher proportion of time helping the older sibling participate in youth sport. Despite this, the younger sibling did not perceive this treatment as unfair, and instead was happy for his older sibling and felt that their parents were reasonable in their treatment of both siblings.

One unique finding in the present examination was that some parents described a need/desire for their children to pursue their own youth sport path. This type of parent intervention seems to support differentiation theory at the family level and is something that was not expected \(a\) \(priori\), however it is similar to a potential explanation proposed by Schacter et al. (1978), by explaining that mothers may influence differentiation among siblings. As such, parents’ influence on siblings’ modeling and differentiation represents an important research direction that could be investigated in future work on families in sport.
Finally, it should be noted that family processes and sibling relationships in sport were similar and different within and across families (see RQ4). Similarities and differences among families were found in the ways parents supported their children. Specifically, consistent with previous research on parents’ involvement in youth sport, parents served as the gatekeepers of youth sport participation by providing transportation, money, and other types of support (Dorsch, Smith, & McDonough, 2009; Dunn et al., 2016; Kirk et al., 1997). Other parents were or became more involved in their child’s youth sport experience by coaching and/or participating themselves. Across families, sibling conflict and warmth were both reported as being normative sibling behavior.

While not explicitly seen in this study, warmth and conflict have been linked to modeling and differentiation behaviors in past family literature (e.g., Whiteman et al., 2007). When interpreting data from the present study through a family systems lens, the importance of examining multiple actors in the family unit becomes quite obvious. Specifically, when examining the responses from each family member in light of the family systems tenet, circular causality, we are able to focus on what is being said or done in the moment and what might be causing certain behavior. If siblings exhibit tones of warmth, then according to circular causality, we may be able to deduce that this type of relationship quality is associated with modeling behaviors, or that the warmth in the relationship is associated with differentiation behaviors.

Taken together, the present data explicate how families interact within their own family unit and how these relationships occur across youth sport contexts. Moreover, the present study highlights commonalities and differences among a variety of families who
are active participants in organized youth sport. This study, therefore, has the potential to aid researchers who wish to examine siblings in youth sport as well as families as a whole.

There are limitations to be considered in interpreting the present study’s findings and designing future research. First, although this study focused on two children within the family unit, many of the participating families had more than two children in the home. In extending the present work, viewing the entire family in youth sport presents a potentially fruitful research pathway. Specifically, researchers could consider conducting a case study where each family member is interviewed about each family relationship, observed multiple relationships in a naturalistic youth sport setting, and perhaps completes prompted or unprompted journals over the course of a youth sport season. Adopting such an approach would help give a more complete picture of true family systems in the youth sport context.

A second, related limitation is that data collection only captured a single time point in the family’s youth sport experience. Collecting families’ responses over the course of seasons or years could foster a sharper understanding of certain interaction patterns that might offer support for feedback loops and circular causality within the family system. Future research should therefore examine how targeted family relationships develop over time, and how those relationships are impacted by other developing relationships within the family.

A third limitation is that the present sample consisted largely of White, upper-middle class families. Each family was composed of two parents and two (participating)
children. As the sport experiences of parents and children are influenced by family demographic factors that evolve over time (see Fredricks & Eccles, 2005), future research should target varying family structures from a range of racial, socioeconomic, and geopolitical backgrounds to enhance understanding of all forms of sibling relationships. Focusing on how these siblings differ over time is also in line with previous work on differentiation theory (Feinberg et al., 2003). Moreover, understanding some of the challenges that exist with resources (e.g., parent-time, financial support) would be particularly beneficial (Dorsch et al., 2009).

Despite these (de)limitations, the present study extends understanding of sibling relationships in youth sport in four ways. First, it increases our understanding of family relationships and processes that influence sibling warmth, conflict, and motivation to participate in youth sport. Second, it identifies processes that exist within families that contribute to sibling modeling and differentiation in sport contexts. Third, it highlights the links between parent-child relationships and sibling relationships in youth sport. Fourth, it explicates how family processes and sibling relationships in sport are similar and different across families. From a practical standpoint, study findings illuminate tensions, challenges, and opportunities that families, and in particular siblings, face in organized youth sport. Sibling relationships in sport can impact other members of the family, and the present data shed light on the experiences parents and children have as they aim to make the most of their organized youth sport experience.
CHAPTER 3

AN EXPLICIT TEST OF MODELING AND DIFFERENTIATION AMONG SIBLINGS PARTICIPATING IN ORGANIZED YOUTH SPORT (STUDY 2)

Sibling relationships are recognized as the longest lasting relationship in the family unit (Cicirelli, 1995; Whiteman, McHale, & Soli, 2011). Importantly, sibling relationships exist without regard for personal preference and without any explicit contract of acknowledgement – rather, these relationships may be considered *fait accompli* based simply on sharing a biological mother and father. Although sibling relationships are not made by choice, they serve as formative instruments of socialization, having the potential to greatly impact the trajectory of both individuals’ lives (Feinberg et al., 2003; Slomkowski, Rende, Novak, Lloyd-Richardson, & Niaura, 2005). Indeed, across the lifespan, siblings may serve as both rivals and role models (McHale et al., 2012; Volkom, 2006), while exhibiting tones of both warmth and conflict in daily interactions (Campione-Barr & Smetana, 2010; Stoneman, 2001). These interactions can take place in a variety of contexts, one of which is organized youth sport (Fraser-Thomas et al., 2008).

Two processes that can help explain a younger sibling’s developmental trajectory are modeling and differentiation (Whiteman et al., 2007). In their 2007 study, Whiteman and colleagues examined how older siblings influenced younger brothers and sisters’ behavior in four domains. Of the 382 youth surveyed, the results revealed that siblings reported similar outcomes when younger siblings reported higher levels of modeling and
when older siblings ranked themselves higher on engagement in risky behaviors, peer competence, and interests in extracurricular activities such as athletics. These findings point to the amount of influence an older sibling can have on the behaviors of a younger siblings. In addition, when engaged in modeling processes, younger siblings often pursue a similar life course to their older siblings, using them as temporal reference points over the lifespan (Solmeyer, McHale, & Crouter, 2014). In other cases, a younger sibling may choose to differentiate (Whiteman et al., 2011), pursuing a distinct pathway to reduce competition and comparison within the family. In their theoretical literature review on sibling relationships, Whiteman and colleagues (2011) examined four theoretical perspectives in relation to sibling behavior. One theoretical perspective was that of Alfred Adler’s Individual Psychology (Ansbacher & Ansbacher, 1956). Of note is that as siblings compete for resources within a family, they may differentiate in order to reduce competition. When taking both modeling and differentiation behaviors into account within the context of youth sport, a child may engage in modeling by choosing to participate in the same sport, wear the same number, or play the same position as an older sibling, whereas another may differentiate by participating in a different sport or playing a different position than an older sibling, or by choosing not to play sport altogether.

Previous research suggests that modeling and differentiation have the potential to foster both positive and negative experiences for youth engaged in sport and physical activity (see Blazo & Smith, 2017 for review). The majority of research in this area, however, lacks guiding theory and/or applies theory in a post hoc fashion. In light of this, the present research uses theory to frame empirical understanding of younger siblings’
socialization experiences in organized youth sport. Specifically, the present study has been designed as an explicit test of social learning theory and differentiation theory processes (i.e. modeling, differentiation).

**Modeling**

Modeling has been cited as a primary social mechanism driving observed similarity in sibling outcomes (Whiteman et al., 2013). As a means of social learning, modeling is defined as acquiring knowledge through the observation of other individuals (Bandura, 1977). Previous to siblings modeling behavior we see that individuals go through a certain process. This process encompasses paying attention to the potential model, retaining the behavior cognitively, understanding that you do or do not have the physical capability to reproduce the behavior, and feeling motivated to actually attempt the modeled behavior. As individuals follow these steps they then try to imitate the behavior modeled. Through imitation, practicing the behavior, and receiving feedback regarding the behavior, individuals have a better chance of actually modeling the behavior. In youth sport an younger sibling may see an older sibling participate in a sport that looks appealing. Once they have grasped an idea of how they can follow the certain behavior they then replay this memory until they actually try to attempt the behavior. Once the younger sibling feels like they can perform the behavior, they then feel a sense of motivation to actually perform the behavior and try to imitate the behavior. However, in addition to the processes that take place before modeling occurs, other factors play a
key role in determining whether or not a younger sibling will want to model an older siblings’ behavior.

One key aspect of modeling is that observers are more likely to model behaviors of another individual when the two individuals are more similar (Bandura, 1977; Sutton-Smith & Rosenberg, 1970). Contemporary sibling scholars note that younger siblings who are more similar in age and biological sex are more likely to model behavior (Boyle et al., 2001; Trim et al., 2006).

In addition, sibling dyads who exhibit modeling behaviors are more likely to have warmer relationships (Slomkowski et al., 2005). Regarding sibling smoking behavior, Slomkowski et al., (2005) used data that was collected on 1421 sibling pairs. Among the findings were that sibling effects on smoking were significant even after controlling for smoking by both parents and peers. Indeed, past research suggests that the sibling modeling process is largely unidirectional, with younger siblings modeling the behavior of older siblings in multiple domains (e.g., drug and alcohol use, sexual activity, interests, extracurricular activities) (e.g., Boyle, Sanford, Szatmari, Merikangas, & Offord, 2001; Whiteman et al., 2007, 2013). In the sport literature, emerging qualitative research suggests that modeling can be a key process engaged in by younger siblings during childhood and adolescence as they pursue similar developmental milestones to their older siblings (see Blazo et al., 2014; Taylor, Carson, & Collins, 2017). Because siblings have the potential to affect each other in a variety of contexts and knowing that siblings who are more similar in ascribed ways may model behavior exhibited by an older sibling, the
present study, in part, is inspired by this knowledge and having the opportunity explicitly examine reports of influence.

**Differentiation**

Although youth sport certainly provides a context for sibling modeling, it is also important to consider the impact of differentiation among siblings in sport. Differentiation theory, based largely on Adler’s psychoanalytic theory, posits that younger siblings will differentiate, or choose different pathways from an older sibling, in an effort to create a unique identity (Ansbacher & Ansbacher 1956; Whiteman et al., 2007). In his original work, Adler examined sibling birth order and the frustrations that can result from being born first, second, or last. Specifically, Adler noted how older siblings feel a sense of fear because of the possibility that they will be dethroned. Other work examining siblings different behavior calls the process deidentification (Schacter et al., 1976). Noted by researchers, sibling deidentification takes place when children within a family choose different paths in order to reduce competition for resources, resulting in greater relationship intimacy between siblings (Schacter et al., 1978; Whiteman et al., 2007). Interestingly, past research has also found evidence of lower levels of intimacy among siblings who differentiate (Whiteman et al., 2007). Even though this finding contradicts a core tenet of differentiation theory, it may be that siblings’ relationship quality reports are linked to differentiation as opposed to psychodynamic drives (i.e., the reduction of competition). In sport, differentiation typically occurs when a younger sibling wants to chart her or his own course in an effort to secure more parent and family resources (e.g., time, money, affection) (see Blazo et al., 2014; Taylor et al., 2017). In
direct contradiction to social learning processes, differentiation theory posits that a younger sibling who is more similar to an older sibling in terms of biological sex and age, is more likely to differentiate, resulting in less competition for resources and a warmer overall sibling relationship.

Importantly, there appears to be an incompatibility between modeling and differentiation processes. In light of this, there is a critical need to explore the impact of these opposing processes on younger siblings’ sport participation choices. Indeed, testing the competing processes of modeling and differentiation within the context of youth sport has the potential to help researchers better understand sibling influence within the broader context of the family, while also offering researchers and practitioners a more nuanced understanding of sibling influence in organized youth sport.

**Potential Moderators of Modeling and Differentiation**

To more clearly understand older siblings’ influence in organized youth sport, research must consider the many factors that may moderate modeling and differentiation processes. At minimum, two potential moderators should be included when considering younger siblings’ youth sport choices: biological sex composition of the sibling dyad and age difference. These factors are important, as theory and past research suggests that older siblings who are more like younger siblings in these ascribed characteristics (i.e., biological sex, age) are more likely to influence processes of modeling (e.g., Slomkowski et al., 2001, 2005) and differentiation (e.g., Feinberg & Hetherington, 2000; Feinberg et al., 2003; Schacter et al., 1976, 1978).
Control Variables

In addition to the predictor variables and moderating variables listed above, it is important to consider variables for which to control. Indeed, when recognizing the many potential influence factors on younger siblings’ youth sport participation choices, one should recognize global factors such as sibling relationship quality and parent-child relationship quality. Indeed, sibling relationship quality has been recognized as an influence mechanism of sibling choices (Slomkowski et al., 2005; Trim et al., 2006) and parent-child relationship quality has been shown to influence youths’ experiences on outcomes in sport (Dorsch et al., 2016). Controlling for these variables will allow researchers to better discern whether sibling modeling and/or differentiation predicts youth sport participation outcomes, above and beyond relationship quality with various members of the family unit.

The Present Study

An overarching goal of the present study was to create a more holistic understanding of the family system in youth sport by examining the understudied—yet salient—dyad of siblings. To date, a limited amount of research has been explicitly designed to examine sibling processes in organized youth sport (see Blazo & Smith, 2017 for review). Because such work has the potential to enhance practical and theoretical knowledge at the intersection of family and sport, the present study is designed to examine how younger siblings’ reports of modeling and differentiation, in reference to
older siblings, predicts similarities/differences in siblings’ youth sport participation choices.

Because this study is exploratory, in that theoretical concepts have not been explicitly examined regarding sibling behavior in youth sport (Blazo & Smith, 2017) and in line with this overarching purpose of this study, two explicit aims directed the present work: (a) examine the extent to which reports of modeling and differentiation behaviors predicted younger siblings’ youth sport participation decisions; and (b) determine the potential moderating influence of ascribed factors (i.e., biological sex composition of the dyad and age gap between siblings) on these processes. Given the competing hypotheses (i.e., modeling and differentiation) supported in past developmental theory, the following hypotheses were forwarded: (H1) Younger siblings who reported higher levels of modeling behavior would be more likely to report the same primary sport outcome as older siblings; (H2) Younger siblings who reported higher levels of differentiating behavior would be more likely to report a different primary sport outcome as older siblings; (H3) Biological sex composition would moderate the relationship between each independent variable (i.e. modeling, differentiation) and siblings’ youth sport participation. According to modeling principles, reports of same biological sex will increase the probability of siblings choosing the same main youth sport. On the other hand, differentiation principles predict that reports of same biological sex will increase the probability of differentiation between siblings; (H4) Age difference would moderate the relationship between each independent variable (i.e., modeling, differentiation) and siblings’ youth sport participation. Similar to biological sex, according to modeling
principles, as siblings are more similar or closer in age, younger siblings will be more likely to model older siblings sport behavior. However, according to differentiation principles, younger siblings who are closer in age to their older sibling will be more likely to differentiate from their older sibling in terms of sport participation behavior.

In addressing these hypotheses, the present work has the potential to extend past empirical efforts that document modeling and differentiation processes with regard to time spent in sport (e.g., Whiteman et al., 2007) as well as youth’s skills, interest, and participation in sport (e.g., Osai & Whiteman, 2017).

**Method**

**Participants**

Participants included 221 children (117 males and 104 females) from the United States. An accounting of number of participants by state can be found in Appendix E. Of the 221 participants, 1.4% \((n = 3)\) identified as American Indian/Alaskan Native, 2.7% \((n = 6)\) as Asian, 13.6% \((n = 30)\) as Black or African American, 57% \((n = 126)\) as White, 19.5% \((n = 43)\) as “More than one race,” and 5.9% \((n = 13)\) as “Unknown/Other.” Of those who participated, 111 reported on a same-sex sibling, and 110 reported on an opposite-sex sibling. Because modeling and differentiation processes engaged in by younger siblings were examined, younger siblings were asked to report on themselves and a proximal older sibling who also participated in sport. The sample was a non-randomized convenience sample, which is a common practice in the social sciences (Gall, Gall, & Borg, 2007). Participants ranged in age from 10 to 15 years-old and were also
actively engaged in organized youth sport at the time of data collection. Participants reported on their most proximal older sibling, all of whom were within 4 years of age of the participating sibling (range = .92 years to 3.92 years; $M = 2.43$ years; $SD = .76$ years). Eleven- to 13-year-old youth athletes were originally recruited to report on their proximal older sibling in order to ensure that they understood the study questionnaire and because this is the age range where youth begin to dropout of youth sport. However, because the questionnaire measured at a 5.2 reading level (using Microsoft word 2016), which is about 10 to 11 years of age and because youth continue to dropout as they increase in age, the primary researcher allowed responses from youth 10 to 15 years of age. In addition, these responses allowed for the necessary amount of power for statistical analysis.

**Procedures**

Upon approval by the Utah State University Institutional Review Board for the protection of human participants, permission to recruit children from a variety of key youth sport stakeholders (e.g., recreation managers, sport administrators, club coaches) across the United States was sought. Subsequent to obtaining stakeholder permissions, an anonymous online survey link was sent to parents of the children currently participating in these organizations. In addition, individuals who expressed interest in the survey and wanted to share it with adults who had children that qualified, were sent an email template with the survey link (see Appendix F). As noted by Gall and colleagues (2007),
this type of snowball sampling approach allowed individuals to seek and refer families who met the stated research criteria.

Each anonymous online survey link consisted of: (a) a letter of information explaining the study (see Appendix G), (b) consent and assent forms to be signed by the parent/guardian and child, respectively (see Appendix G), and (c) the survey instrument to be filled out by the child (see Appendix H). Participants had the ability to complete the survey at a time and location of their choosing; however, the entire survey protocol needed to be completed in one sitting. In Part I of the survey, parents read a brief letter of information and subsequent consent and assent forms were filled out electronically. In Part II, the participating child completed the 68-item survey protocol.

Measures

**Individual and family demographics** were collected by asking children to respond to a series of questions about themselves and their families. Specifically, each participant was asked to report her/his age, biological sex, ethnicity, race, grade level, number of sports participated in, primary sport, current sport, and goals for sport participation. In addition, participants reported the birth date, biological sex, primary/main sport, and other sports participated in, for their most proximal older sibling.

**Sibling modeling and differentiation** was examined using a scale developed to examine sibling influence processes (i.e., how much a younger sibling tried to be like or different than their older sibling) (Whiteman et al., 2010). The original 18-item measure consisted of eight items measuring social learning (i.e., modeling) and 10 items
measuring differentiation. Answers were scored on a scale ranging from 1 (Never) to 5 (Very often). In the present study, items were contextualized to the youth sport domain. Example sport-adapted items are “My older sibling provides a model for how I should play sports” (modeling) and “I play different sports so I won’t be like my older sister/brother” (differentiation). Mean scores were calculated for each subscale, with higher scores indicating higher levels of modeling or differentiation. The original subscales showed internal consistency of scores of .90 and .85 for modeling and differentiation, respectively. In the present study, alpha levels were .83 and .81 for modeling and differentiation, respectively. The dimensions of these measures have been found to be orthogonal and valid in previous research (Whiteman 2007, 2010, 2014) and were therefore examined independently in the present study. However, as reported below in Table 2, modeling and differentiation were found to be negatively correlated $r = -.21$. This negative correlation points to criterion validity in that as we have more of one construct we have less of another. This finding makes sense in that we would expect opposing constructs to be negatively related or not related to one another. In addition, this finding helps to know that our predictor variable is not collinear.

**Age Difference** was calculated by subtracting the younger sibling’s birth date from the older sibling’s birthdate. Age differences were rounded to two decimal places (i.e., an age difference of 1 year, 3 months, 9 days would be denoted in the dataset as 1.27).
**Biological Sex composition** was categorized as same-sex (male-male and female-female) or mixed-sex (male-female and female-male) dyads. The same-sex category was utilized as the reference group (0 = same-sex dyad, 1 = mixed-sex dyad).

**Primary sport**, the dependent variable in this study, was categorized to recognize whether or not younger siblings indicated that they chose to participate in the same primary sport as their older siblings (0 = different sport, 1 = same sport).

**Sibling relationship quality** was examined using the *Sibling Relationship Inventory Scale (SRIS)* (Stocker & McHale, 1992). This scale is used to measure global levels of warmth and conflict in the sibling relationship. An example item for warmth is “How much do you teach your sibling things or help her/him figure something out?” and an example item for conflict is “Some kids are mean to their sibling sometimes, even if they really care about them. How often would you say your sibling does things to you like tease you, bug you, or call you names?” Responses were measured using a Likert scale ranging from 1 (*Never or hardly at all*) to 5 (*Always*). Average scores were calculated for each subscale, with higher scores indicating higher perceived levels of warmth or conflict. Past research demonstrated internal consistency reliability of scores ranging from .74 to .84 for older siblings and .71 to .88 for younger siblings (e.g., Stocker & McHale, 1992). In addition, Blazo (2015) determined that sibling warmth and conflict showed acceptable internal consistency with alpha levels of .72 for both subscales. In this study internal consistency reliability of scores was found to be .82 for sibling conflict and .77 for sibling warmth. The *SRIS* has demonstrated validity in past research across child and early adolescent populations (e.g., Stocker & McHale, 1992). In addition, as noted in
Table 2 sibling warmth and sibling conflict were negatively correlated, $r = -.26$, which is what we would expect in helping explain criterion validity of these constructs.

**Parent-Child Warmth** was assessed using a sport-adapted version of the Child’s Report of Parental Behavior Inventory (CRPBI; Schwarz, Barton-Henry, & Pruzinsky, 1985). Original items were adapted to the youth sport context by Dorsch and colleagues (2016) and showed good internal consistency of scores for the sport-adapted measure ($\alpha = .80$). Example sport-adapted items are: “My father speaks to me in a warm and friendly voice during my sport.” and “My mother is able to make me feel better when I am upset about my sport.” Items are measured on a Likert scale from 1 (*Really Unlike Us*) to 4 (*Really Like Us*). In this study father-child warmth demonstrated high reliability, with internal consistency of scores of .89 and .86 for father-child and mother-child warmth, respectively. The CRPBI has demonstrated validity in past research across youth sport participants (e.g., Dorsch et al., 2016). Validity is also demonstrated with the positive correlations between father and mother warmth measures at $r = .58$.

**Parent-Child Conflict** was measured using a three-item modified subscale from the Sport Friendship Quality Scale (SFQS; Weiss & Smith, 1999). Original items were first contextualized to the youth sport context by Ullrich-French and Smith (2006) and have since been validated on independent youth sport samples by Dorsch and colleagues (Dorsch et al., 2016; Dorsch, King, et al., 2016). These studies have shown internal consistency of scores ranging from .78 to .92. Sample sport-adapted items include: “My father and I fight about sports.” and “My mother and I have arguments about sports.” Participants were asked to rate each item on a Likert scale from 1 (*Not at all true*) to 5
(Really true). In the present study internal consistency of scores were .76 for father-child conflict and .78 for mother-child conflict. Validity is also demonstrated with mother and father conflict measures being correlated at $r = .55$.

**Data Analysis**

Descriptive statistics were calculated based on the recommendations of Tabachnick and Fidell (2013) to assess the means, standard deviations, and distributions of all study variables (see Table 2). Primary data were then analyzed using logistic regression models in SPSS version 24. Logistic regression was utilized because the predictive model had a single, dichotomous outcome. In the present study, the main predictors were younger siblings’ levels of reported modeling and differentiation and the binary outcome variable was the match of the sibling dyad’s primary sport participation ($0 = $ different sport, $1 = $ same sport). This analytic strategy was used to determine whether younger siblings’ reports of modeling and differentiation predicted the same or different sport participation choices relative to their most proximal older sibling.

Because previous research suggests that the sex composition and age difference of sibling dyads have the potential to shape modeling and differentiation processes, these two variables were included as potential moderators in the regression model. Sex composition of the dyad was coded as $0 = $ same-sex, $1 = $ mixed-sex dyad. Age difference was calculated by subtracting the age of the younger sibling from that of the proximal older sibling (greater than 0 but less than 4 years). All variables, except for biological sex composition, were mean-centered.
A total of three models were analyzed. *Model 1* tested the main effects of the predictor variables (i.e., modeling and differentiation) on siblings’ primary sport participation (i.e., same or different) controlling for biological sex composition, age difference, sibling warmth, sibling conflict, father-child warmth, father-child conflict, mother-child warmth, and mother-child conflict. This step highlighted the variables that had a significant effect on younger siblings’ primary sport participation choices. Values were recognized as significant at $p < .05$, $p < .01$, $p < .001$; however, given the exploratory nature of the present work, values at the $p < .10$ level are also flagged in the model summary.

*Model 2* tested for interaction effects among the predictor and moderating variables. Two-way interactions were examined for the following five variable sets: (a) modeling x biological sex composition, (b) differentiation x biological sex composition, (c) modeling x age difference, (d) differentiation x age difference, and (e) biological sex composition x age difference. Examining these interactions highlighted the roles these moderators played in the relationship between the two predictor variables and the dichotomous outcome variable.

*Model 3* tested for three-way interactions. Three-way interactions were examined for the following two variable sets: (a) modeling x biological sex composition x age difference, and (b) differentiation x biological sex composition x age difference. Examining these interactions highlighted the simultaneous roles the two potential moderating variables had on the direction and magnitude of the relationship between the predictor variables and the dichotomous outcome variable. For each significant model,
odds ratios were also calculated to determine the likelihood of a certain variable predicting membership in the same-sport (i.e., sibling modeling).

Results

Descriptive Statistics

Correlations, means, standard deviations, ranges of study variables, and Cronbach’s alpha levels are found in Table 2. Inspection of these values indicates that a number of variables were significantly correlated. Importantly, we find significant correlations among the main predictors variables. Modeling was negatively significantly correlated with Differentiation $r = -0.21$ at the $p < .01$. In addition, we see that many of the variables are significantly correlated with each other. Variables such mother-child and father child warmth were significantly correlated $r = .58$. Sibling differentiation was significantly correlated with each of the other variables except biological sex composition and age difference. Cronbach alpha levels ranged from .76 to .89, suggesting that the measures were reliable. In addition, means and standard deviations can be found in Table 2.
<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sibling conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Sibling warmth</td>
<td></td>
<td></td>
<td>-.26***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Sibling modeling</td>
<td></td>
<td>-.18**</td>
<td></td>
<td></td>
<td>.42***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sibling differentiation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.21**</td>
<td>-.25***</td>
<td></td>
<td>-.21**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Father warmth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.25***</td>
<td>.18**</td>
<td></td>
<td>.24***</td>
<td>-.16*</td>
<td></td>
</tr>
<tr>
<td>6. Father conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.20**</td>
<td>-.10</td>
<td></td>
<td>-.21**</td>
<td>.13*</td>
<td>-.46***</td>
</tr>
<tr>
<td>7. Mother warmth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.24***</td>
<td>.23**</td>
<td></td>
<td>.24***</td>
<td>-.27***</td>
<td>.58***</td>
</tr>
<tr>
<td>8. Mother conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.25***</td>
<td>-.04</td>
<td></td>
<td>-.09</td>
<td>.15*</td>
<td>-.30***</td>
</tr>
<tr>
<td>9. Biological Sex Composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.17**</td>
<td>-.11</td>
<td></td>
<td>-.17*</td>
<td>-.07</td>
<td>.09</td>
</tr>
<tr>
<td>10. Age Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.130</td>
<td>.038</td>
<td></td>
<td>.127</td>
<td>-.041</td>
<td>-.066</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.61</td>
<td>2.93</td>
<td>3.37</td>
<td>2.40</td>
<td>3.34</td>
<td>1.48</td>
<td>3.51</td>
<td>1.24</td>
<td>.501</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.86</td>
<td>.63</td>
<td>.72</td>
<td>.62</td>
<td>.56</td>
<td>.83</td>
<td>.56</td>
<td>.62</td>
<td>_</td>
<td>.76</td>
</tr>
<tr>
<td>Range</td>
<td>1-5</td>
<td>1-5</td>
<td>1-5</td>
<td>1-5</td>
<td>1-4</td>
<td>1-5</td>
<td>1-4</td>
<td>1-5</td>
<td>0-1</td>
<td>.92-3.92</td>
</tr>
<tr>
<td>α</td>
<td>.82</td>
<td>.77</td>
<td>.83</td>
<td>.81</td>
<td>.89</td>
<td>.76</td>
<td>.86</td>
<td>.78</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>

Note. Cronbach’s alpha (α) values ≥ 0.90 represent excellent levels of internal consistency, α values from .70 - .90 represent good levels of internal consistency, α values from .60 - .70 represent adequate levels of internal consistency, and α values ≤ .50 represent low levels of internal consistency (Cronbach, 1975). *p < .05, **p < .01, ***p < .001
Within the first model (see Table 3) a statistically significant relationship was found between sibling differentiation and primary sport participation, \( b = -0.566, \ SE = 0.266, \ OR = 0.568, \ p = 0.033 \). This suggests that, when holding all other variables constant, younger siblings were more likely to differentiate in main sport participation from an older sibling. The odds ratio \( 0.568 \) highlights that with each one-unit increase in younger siblings reports of differentiation, the likelihood of younger siblings reporting the same primary sport as their older sibling decreases by 43.2\% (1 minus the odds ratio). The impact of modeling behaviors on primary sport was nonsignificant.

Model 1 also revealed that biological sex composition was inversely associated with younger siblings’ reports of choosing the same sport as an older sibling, \( b = -1.101, \ SE = 0.313, \ OR = 0.332, \ p < 0.001 \). This means that youth from mixed-sex sibling dyads were less likely to choose the same sport as youth from same-sex sibling dyads \( 0.332 \). In addition, the negative finding is statistically significant at the \( p < 0.001 \) level, meaning that the difference between same-sex siblings’ and mixed-sex siblings’ likelihood of being in the same sport group is statistically significant. According to the odds ratio, as biological sex composition increased one unit to mixed biological sex composition the likelihood of younger siblings from mixed-sex dyads participating in the same sport as their older sibling decreases by 66.8\% (1 minus the odds ratio).
Table 3
Summary of logistic regression analysis examining the association between, younger siblings reports of modeling and differentiation in addition to ascribed factors, and the predicted probability of being in the same main sport, while controlling for relational factors (N = 221)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>OR [95% CI]</td>
<td>B</td>
<td>OR [95% CI]</td>
<td>B</td>
<td>OR [95% CI]</td>
<td>B</td>
<td>OR [95% CI]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>.151</td>
<td>1.163</td>
<td>.161</td>
<td>1.175</td>
<td>.214</td>
<td>1.239</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation</td>
<td>-.566*</td>
<td>.568</td>
<td>-.634†</td>
<td>.531</td>
<td>-.684†</td>
<td>.505</td>
<td>252, 1.010</td>
<td>252, 1.010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Sex Composition</td>
<td>-1.101***</td>
<td>.332</td>
<td>-1.079***</td>
<td>.340</td>
<td>-1.156***</td>
<td>.315</td>
<td>164, .604</td>
<td>164, .604</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Difference</td>
<td>.042</td>
<td>1.043</td>
<td>-.227</td>
<td>.797</td>
<td>-.341</td>
<td>.711</td>
<td>409, 1.234</td>
<td>409, 1.234</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibling Warmth</td>
<td>.425</td>
<td>1.530</td>
<td>.351</td>
<td>1.420</td>
<td>.412</td>
<td>1.510</td>
<td>.866, 2.633</td>
<td>.866, 2.633</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibling Conflict</td>
<td>.363†</td>
<td>1.437</td>
<td>.344†</td>
<td>1.411</td>
<td>.380†</td>
<td>1.463</td>
<td>.976, 2.191</td>
<td>.976, 2.191</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father Warmth</td>
<td>-.213</td>
<td>.808</td>
<td>-.174</td>
<td>.840</td>
<td>-.175</td>
<td>.840</td>
<td>.386, 1.826</td>
<td>.386, 1.826</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father Conflict</td>
<td>.013</td>
<td>1.013</td>
<td>.034</td>
<td>1.035</td>
<td>.084</td>
<td>1.088</td>
<td>.657, 1.800</td>
<td>.657, 1.800</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Warmth</td>
<td>.250</td>
<td>1.285</td>
<td>.291</td>
<td>1.337</td>
<td>.307</td>
<td>1.359</td>
<td>.651, 2.835</td>
<td>.651, 2.835</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Conflict</td>
<td>.046</td>
<td>1.047</td>
<td>.130</td>
<td>1.139</td>
<td>.071</td>
<td>1.074</td>
<td>.571, 2.021</td>
<td>.571, 2.021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modeling x Biological Sex Composition</td>
<td>.125</td>
<td>1.133</td>
<td>.125</td>
<td>1.133</td>
<td>.125</td>
<td>1.133</td>
<td>.468, 2.742</td>
<td>.468, 2.742</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation x Biological Sex Composition</td>
<td>.004</td>
<td>1.004</td>
<td>.004</td>
<td>1.004</td>
<td>.004</td>
<td>1.004</td>
<td>.343, 2.941</td>
<td>.343, 2.941</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modeling x Age Difference</td>
<td>-.115</td>
<td>.891</td>
<td>-.115</td>
<td>.891</td>
<td>-.115</td>
<td>.891</td>
<td>.502, 1.581</td>
<td>.502, 1.581</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation x Age Difference</td>
<td>-.629</td>
<td>.586</td>
<td>-.283</td>
<td>1.213</td>
<td>-.283</td>
<td>1.213</td>
<td>.283, 1.213</td>
<td>.283, 1.213</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Sex Composition x Age Difference</td>
<td>.659</td>
<td>1.933</td>
<td>.659</td>
<td>1.933</td>
<td>.659</td>
<td>1.933</td>
<td>.835, 4.475</td>
<td>.835, 4.475</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modeling x Biological Sex Composition x Age Difference</td>
<td>-.191†</td>
<td>.304</td>
<td>-.191†</td>
<td>.304</td>
<td>-.191†</td>
<td>.304</td>
<td>.086, 1.068</td>
<td>.086, 1.068</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation x Biological Sex Composition x Age Difference</td>
<td>-1.787*</td>
<td>.168</td>
<td>-1.787*</td>
<td>.168</td>
<td>-1.787*</td>
<td>.168</td>
<td>.034, .824</td>
<td>.034, .824</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \chi^2 )</td>
<td>34.592***</td>
<td></td>
<td>40.427***</td>
<td></td>
<td>47.487***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>10</td>
<td></td>
<td>15</td>
<td></td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( \star p < .10, \* p < .05, ** p < .01, *** p < .001 \)
Model 2

Model 2 tested five two-way interactions, (a) Modeling x Biological Sex Composition, (b) Differentiation x Biological Sex Composition, (c) Modeling x Age Difference, (d) Differentiation x Age Difference, and (e) Biological Sex Composition x Age Difference. No significant results were found in the two-way interactions. Values can be viewed in Table 3.

Model 2 did reveal that the impact of biological sex composition and primary sport participation remained significant \((b = -1.079, \ SE = .321, \ OR = .340, \ p = .001)\) when interactions were added into the model. Similar to Model 1, findings revealed at the \(p < .001\) level that participants from mixed-sex dyads were less likely to report that they played the same main sport as their proximal older sibling \([.344]\). This means that for each one-unit increase in biological sex composition the likelihood of the younger sibling from mixed-sex dyads participating in the same sport as their older sibling decreases by 65.6% \((1 \ minus \ the \ odds \ ratio)\).

Model 3

As demonstrated in Table 3, Model 3 tested the two three-way interactions between the two predictor variables (i.e., modeling and differentiation) and the potential moderating variables of biological sex composition and age difference. Similar to Models 1 and 2, results of the final model showed a significant inverse main effect for biological sex composition, \(p < .001\), odds ratio \([.312]\). In addition, a three-way interaction (differentiation x biological sex composition x age difference) was found to be significant at \(p < .05\), \((b = -1.787, \ SE = .813, \ OR = .168, \ p = .028)\). In order to further investigate
this interaction, eight probabilities were calculated and graphed (see Table 4 and Figure 1, respectively) to represent the trajectories of groups in relation to the probability of participating in the same sport as an older sibling.

Table 4
*Representing the Three-way Interaction Involving Differentiation, Biological Sex Composition, and Age Difference*

<table>
<thead>
<tr>
<th>Groups Differentiation</th>
<th>Log Odds or Y-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low differentiation, same-gender, narrow age-difference</td>
<td>1.06</td>
<td>0.74</td>
</tr>
<tr>
<td>Low differentiation, same-gender, wide age-difference</td>
<td>0.22</td>
<td>0.55</td>
</tr>
<tr>
<td>Low differentiation, mixed-gender, narrow age-difference</td>
<td>-1.42</td>
<td>0.19</td>
</tr>
<tr>
<td>Low differentiation, mixed-gender, wide age-difference</td>
<td>0.56</td>
<td>0.64</td>
</tr>
<tr>
<td>High differentiation, same-gender, narrow age-difference</td>
<td>-0.11</td>
<td>0.47</td>
</tr>
<tr>
<td>High differentiation, same-gender, wide age-difference</td>
<td>-0.63</td>
<td>0.35</td>
</tr>
<tr>
<td>High differentiation, mixed-gender, narrow age-difference</td>
<td>-1.08</td>
<td>0.25</td>
</tr>
<tr>
<td>High differentiation, mixed-gender, wide age-difference</td>
<td>-1.83</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Figure 1 shows that (for three out of the four groups) as we examine participants reports from lower to higher differentiation, the probability of being in the same sport as an older sibling decreased. Largely, participants who follow this course were younger siblings who were (a) the same biological sex and have narrow age difference compared to their older siblings, (b) the same biological sex and had a wide age difference compared to their older siblings, and (c) are mixed-gender dyads who have a wide age difference. Interestingly we notice a positive trajectory for mixed gender dyads who have a narrow age spacing, when examining the trend going from low to high differentiation.
Figure 1. Three-way interactions among variables Differentiation x Biological Sex Composition x Age Difference and probability of younger sibling being in the same main sport as their older sibling.

Even though a significant finding at the $p < .05$ value was not demonstrated for modeling x biological sex composition x age difference, it is worth noting that the $p$-value was .063. Because this study is exploratory in nature, we cautiously interpret this interaction effect and plot it in Figure 2.
Figure 2. Three-way interactions among variables Modeling x Biological Sex Composition x Age Difference and probability of younger sibling being in the same main sport as their older sibling.

Including this plot may help explain the interaction effects among mixed-gender dyads with narrow age-spacing. Probabilities of each of the eight possible combinations of groups can be found in Table 5.

Table 5

Representing the Log Odds or Y-Value and Probabilities of the Three-way Interactions Involving Modeling, Biological Sex Composition, and Age Difference

<table>
<thead>
<tr>
<th>Groups Modeling</th>
<th>Log Odds or Y-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low modeling, same-gender, narrow age-difference</td>
<td>0.58</td>
<td>0.64</td>
</tr>
<tr>
<td>Low modeling, same-gender, wide age-difference</td>
<td>-0.35</td>
<td>0.41</td>
</tr>
<tr>
<td>Low modeling, mixed-gender, narrow age-difference</td>
<td>-1.81</td>
<td>0.14</td>
</tr>
<tr>
<td>Low modeling, mixed-gender, wide age-difference</td>
<td>-0.31</td>
<td>0.42</td>
</tr>
<tr>
<td>High modeling, same-gender, narrow age-difference</td>
<td>0.36</td>
<td>0.59</td>
</tr>
<tr>
<td>High modeling, same-gender, wide age-difference</td>
<td>-0.16</td>
<td>0.46</td>
</tr>
<tr>
<td>High modeling, mixed-gender, narrow age-difference</td>
<td>-0.69</td>
<td>0.33</td>
</tr>
<tr>
<td>High modeling, mixed-gender, wide age-difference</td>
<td>-0.95</td>
<td>0.28</td>
</tr>
</tbody>
</table>
In the three-way model, we notice that, above and beyond all groups, the same sex/narrow age difference siblings are more likely to choose to play the same primary sport as their older sibling, whether reporting high or low levels of modeling. However, as participants who meet these criteria travel from low to high on modeling, differentiation may also become more important, hence the negative slope. A second group of participants to report higher probabilities of participating in the same sport as an older sibling is the same-sex/wide age spacing siblings, who report higher levels of modeling behaviors. The mixed-sex/narrow age difference group shows a positive slope from low to high reports of modeling behavior. However, the mixed-sex/wide age spacing group demonstrates that with higher levels of reported modeling behavior, younger siblings are less likely to participate in the same sport as their older siblings.

In order to probe further and to figure out what factors may be adding to these opposing patterns, two exploratory MANOVAs were conducted for modeling and differentiation. These tests were conducted using age difference and biological sex as predictors and modeling and differentiation as the respective outcomes in the two models. Results show significant main effects for biological sex on Modeling ($df = 1$, $mean square = 2.857$, $p < .05$). In addition, a significant interaction between biological sex and age difference on differentiation was found at ($df = 1$, $mean square = 3.258$, $p < .01$).

Figure 3 plots the effect of biological sex and age difference on differentiation behaviors. Results indicate that close age/same-sex siblings were most likely to endorse differentiation behaviors, highlighting an interaction effect between age difference and biological sex. Figure 4 plots the effect of biological sex and age difference on modeling
behaviors. Results highlight two significant main effects, namely that same-sex and greater age gap siblings are more likely to report modeling behaviors.

*Figure 3.* MANOVA results of age difference, biological sex and differentiation.

*Note.* Solid line represents the same biological sex condition of the sibling dyad, dashed lines represent the opposite biological sex condition of the sibling dyad.
Figure 4. MANOVA results of age difference, biological sex group and modeling.

Note. Solid line depicts the same biological sex condition of the sibling dyad; dashed lines depict sibling dyad opposite biological sex condition.
CHAPTER 4

DISCUSSION

The present study was designed to examine how younger siblings’ reports of modeling and differentiation, in reference to older siblings in sport participation, predicted similarities and/or differences in the younger siblings’ youth sport participation choices. Logistic regression models were examined to determine whether younger siblings’ reports of modeling and differentiation predicted the same or different sport participation choices relative to their most proximal older sibling. Employing this analytic technique afforded an understanding of whether younger siblings are more likely to model the behavior of their older siblings or to differentiate from them in youth sport. Findings support differentiation behaviors in that younger siblings were less likely to report participation in the same main sport as their older child.

Data from the present sample provide greater support for differentiation than modeling as a mechanism engaged in by sibling dyads in youth sport. Previous research notes that siblings influence each other in multiple ways across domains (McHale et al., 2009; Meunier et al., 2012; Whiteman et al., 2007). Given the right set of circumstances, younger children and adolescents have been noted to model older siblings’ substance use (Slomkowski et al., 2005; Whiteman et al., 2013). In other circumstances (e.g., alcohol use, adjustment, relationship quality) children and adolescents have been noted to differentiate from an older sibling’s behavior (Feinberg & Hetherington, 2000; Whiteman et al. 2010, 2013).
Within the youth sport literature, modeling *and* differentiation behaviors have been reported by young athletes and their family members (see Blazo & Smith, 2017 for review). These mixed findings are not surprising, as modeling and differentiation have been shown to be orthogonal constructs in previous literature (Whiteman et al., 2007, 2010, 2014). In light of this, much of the sport sibling research has addressed these two influence processes qualitatively and retrospectively. The present study extends that work, providing a first explicit test of these competing hypotheses.

Consistent with our theory derived hypothesis as well as past empirical work on differentiation processes (e.g., Whiteman et al., 2010), younger siblings who reported higher levels of differentiating behavior were more likely to participate in a different primary sport than their older sibling. This finding provides further evidence for differentiating behavior among siblings in youth sport. Specifically, with the exception of the mixed biological sex/greater age difference group, all other groups show support for differentiation from older siblings’ sport participation choices. This finding was more pronounced for mixed-sex dyads who had a greater age difference when reporting higher levels of differentiation. This finding runs contrary to differentiation theory (Schacter et al., 1976), which would predict that the same biological sex/lower age difference group would be more likely to report differentiation behaviors.

One plausible explanation for this finding is that being from a mixed-sex sibling dyad pushes siblings toward different types of sport. For example, females may tend to gravitate toward certain sports (or have certain options available to them, e.g., gymnastics), while males may gravitate toward sports that are different from females (or
have different/more sport options available to them, e.g., football). Indeed, sports like gymnastics, dance, and ice skating seem to be sports that are more female-centric, while sports like football, wrestling, and hockey are more male-centric. Alternatively, it may be that having a wide age difference may present fewer opportunities for siblings to participate at the same time or even on the same teams, a potential bonus for parents of siblings who are close in age. Interestingly, for participants from mixed-sex/closer in age dyads, data revealed the opposite trend; participants were more likely to participate in the same sport. Perhaps mixed-sex siblings who have a small age difference may be provided opportunities to participate in sports at the same time or even on the same team, especially at earlier developmental levels when the girl is the older member of the sibling dyad.

Despite the fact that the present study did not find significant support at the $p < .05$ level for sibling modeling processes in sport, it is still worthwhile to explore this relationship. Doing so highlights whether any of the groups have similar patterns to the groups that saw significant levels of differentiation. Results suggest that same-sex dyads show evidence of modeling, a finding consistent with social learning principles (Bandura, 1977). However, similar to patterns of differentiation, one group ran counter to what would be expected according to social learning theory. Within the modeling groups, younger siblings who had a wider age difference and reported higher modeling behavior actually had lower probabilities of participating in the same sport as their older siblings. When interpreting this outcome, it is likely that age spacing makes a difference in mixed-sex sibling dyads. This would fall in line with our initial hypothesis that age spacing...
would moderate the relationship between modeling and sport participation choices, in that younger siblings farther in age are more likely to not model an older siblings behavior. This is similar to other research noting that age makes a difference with modeling behavior (Whiteman et al., 2013). However, according to the tenets of social learning theory, siblings who are more like each other should be more likely to model behavior, while those who are less like each other should be more likely to differentiate.

**Limitations and Future Directions**

While the present study possesses many strengths, a number of limitations should be considered. The first is that study data are based solely on reports from younger siblings. Taking a dyadic analytic approach by examining reports from both older and younger siblings would help create a more holistic and accurate report of the sibling relationship. Moreover, using a multi-trait multi-method approach in gathering survey responses from mothers and fathers as well as the members of the sibling dyad could provide an interesting perspective on the sibling relationship.

A delimitation of the present study was that it was executed using a cross-sectional design. This affords only a snapshot of younger siblings’ perspectives on modeling and differentiation as well as their primary sport participation, which may itself be seasonal in nature. Adopting a longitudinal approach would account for how younger siblings’ thoughts and behaviors might change over time, which aligns with previous research regarding differentiation (Feinberg & Hetherington, 2000). This also adheres to
a developmental perspective of youth sport participation, as advocated by respected sport
and exercise psychology scholars such as Côté (1999) and Weiss and Raedeke (2004).

A third limitation lies in the fact that the focus of the present study was limited to
the socialization influences of an older sibling on a younger sibling. In drawing from a
systems and/or ecological perspective, future researchers would be wise to take into
account the recursive nature of socialization processes, as well as the potential
moderating effects of shared friendships among sibling dyads (Smith, 2003; Whiteman et
al., 2013). Examining the impact of modeling and differentiation processes among
siblings (bidirectionally) and shared friends holds the potential to help create a more
nuanced understanding of what affects younger and older siblings’ youth sport decisions.
In pursuing this goal, researchers should also take into account whether target youth have
more than one sibling in the household. In accordance, a family systems perspective (Cox
& Paley, 1997), it is likely that these relationships have enduring and multifaceted
implications for youth in sport.

Despite these limitations, the present study extends understanding of sibling
relationships in youth sport in multiple ways. First, by explicitly testing influence
processes, this study provides evidence supporting differentiation and (to a lesser extent)
modeling theory. Importantly, rather than applying these theories post hoc, we
demonstrated that sibling sport participation decisions can be predicted by using theory
that has been tested in other contexts. In addition, the present study identified patterns
associated with ascribed characteristics of siblings, namely biological sex composition
and age differences. Such knowledge provides a foundation for the continued
development of explicit tests of theory related to familial relationships in sport.

From a practical standpoint, this study has the potential to enhance understanding
of how and why younger siblings may engage in modeling and differentiation behaviors
in organized youth sport. Moreover, it affords a sharper understanding of the potential
moderating influence of ascribed factors such as biological sex composition and age
differences on these processes. These findings are important because sibling relationships
in sport can impact other members of the family through the shared experiences in which
parents and children engage in organized youth sport.
CHAPTER 5
GENERAL DISCUSSION

Research highlights the influence that family members have on one another in organized youth sport (Côté, 1999; Dorsch et al., 2015; Wheeler, 2012). While much of this research has focused on parent-child relationships, the focus of the present dissertation was to address the influence siblings have on one another in youth sport. Doing so broadens and complements the existing literature base, and answers calls to enhance understanding of sibling relationships in youth sport (Blazo & Smith, 2017; Côté & Hay 2002; Trussell, 2012). This two-study dissertation extends the existing knowledge base by addressing two notable gaps in understanding. First, there is limited knowledge of family members’ lived experiences as they pertain to sibling relationship dynamics in organized youth sport. Second, theory-based sibling influence processes (i.e., modeling and differentiation) have yet to be explicitly tested with regard to youth’s sport participation decisions. While these studies are able to stand independently on their own, they also complement one another by examining what families are experiencing in youth sport and how these experiences influence sibling behavior.

Addressing the first knowledge gap, Study 1 was designed to highlight how specific family processes affect the perceptions and experiences of the individual athlete, the sibling dyad, and the family as a whole. The qualitative data gleaned from interviews with 48 participants across 12 families explicate the subjective experiences of each participant and family, as well as the shared and non-shared characteristics of youth sport participation across these individuals and families. Guided by the tenets of Family
Systems Theory (Cox & Paley, 1997; Smith & Hamon, 2012), Study 1 therefore represents an important research step as scholars and practitioners aim to learn more about the family’s role in the youth sport experience.

In adhering to a family systems approach in Study 1, two children and two parents from each family participated in interviews. The resultant data shed light on multiple family influences and processes that contribute to youths’ experiences and outcomes in organized sport. Importantly, inferences and interpretations are informed by the experiences of multiple family members across the 12 family units. This approach afforded the collection of rich, family level data and allowed the research team to address multiple limitations noted in previous research (see Blazo & Smith, 2017; Trussell, 2012). In allowing for dyadic reports of each sibling relationship, both members of the relationship were able to provide a unique *emic* interpretation of the sibling relationship within the context of youth sport. By also interviewing both parents in each family, a complementary *etic* perspective was achieved regarding the nature of the sibling relationship.

In interpreting Study 1 data through a family systems lens, it became apparent that change in one sibling’s sport behavior has the potential to cause a disruption in the entire family system. For example, when one of the younger siblings investigated in Study 1 decided to play a different sport than his older sibling, the parents in that family noted how the older sibling gave the younger sibling a hard time about his choice to differentiate. This type of negative feedback is often utilized in sibling relationships to keep things the way they are (morphostasis) (Smith & Hamon, 2012). Then, when things
change, the negative feedback may continue in order to reach homeostasis in an attempt to bring the family back to equilibrium or balance. For parents, this type of behavior can be difficult to deal with, especially if they hope to encourage exploration, change, or differentiation. By considering the idea of circular causality, parents and practitioners can be more introspective in how they react to siblings’ behaviors towards one another. Researchers can also pursue understanding in this area in an effort to provide insights regarding sibling influence processes that impact participation experiences in youth sport (i.e., modeling and differentiation).

A unique aspect of Study 1 was that data highlight parents’ views on sibling relationships and siblings’ participation in organized youth sport. Collecting interview data from 48 participants across 12 families afforded a nuanced understanding of sibling influence processes, while also acknowledging continuity and similarity across families. Importantly, findings provide a foundational understanding of siblings in youth sport across multiple strata of family types. In line with previous research (e.g., Blazo et al., 2014; Davis & Meyer, 2008), siblings in this study exhibited tones of warmth and conflict in sport that at times existed simultaneously. In addition, interview data shed light on how parents are positioned to influence siblings’ youth sport experiences in unison with the influences that are exerted by the siblings themselves. Specifically, participant comments highlight parents’ many roles (e.g., transportation, coaching, socializing children into sport) and are consistent with past research pointing to parents’ socialization of children and adolescents’ sport and non-sport environments (Feinberg, McHale, & Whiteman, in press; Greendorfer, 2002; Parke & Buriel, 1998, 2006).
Addressing the second knowledge gap, Study 2 was designed to examine how younger siblings’ reports of modeling and differentiation, in reference to older siblings, predicted similarities/differences in siblings’ youth sport participation choices. Logistic regression models were examined to determine the extent to which sibling influence processes predicted the same or different sport participation choices relative to a young athlete’s most proximal older sibling. This study was inspired by two competing hypotheses of sibling influence: modeling and differentiation. By testing these influence processes in a moderately sized national sample of youth sport participants ($N = 221$), we were able to test potential predictors and moderators of siblings’ youth sport participation choices. Doing so addressed two primary limitations acknowledged by Blazo and Smith (2017), namely the need to utilize theory when examining siblings in youth sport and the need to survey a large and diverse sample of participants.

Quantitatively testing modeling and differentiation influence processes in a moderately sized study sample affords a sharper understanding of how certain mechanisms operate to influence younger siblings’ youth sport participation choices. Additionally, by controlling for sibling relationship quality and parent-child relationship quality, Study 2’s findings examine the role of modeling and differentiation, while highlighting the role of differentiation above and beyond these other, often disregarded, relational variables. This is significant because previous research in youth sport settings points to perceptions of relationship quality with significant others as a potential source of influence (Bean et al., 2014; Blazo et al., 2014; Davis & Meyer, 2008) and this
research study points to different variables that can be associated with influencing younger siblings sport behavior (i.e., reports of modeling and differentiation).

Importantly, a significant three-way interaction also emerged among younger siblings’ differentiation behaviors, age difference across the sibling dyad, and biological sex composition. Further probing of this interaction through MANOVA’s revealed support for differentiation theory (Ansbacher & Ansbacher, 1956) in this sample, and provides paths forward for future research examining the association of influence processes and young athletes’ ascribed characteristics.

In building on the present dissertation findings, special attention should be paid to the potential impact of parent socialization on children’s sport participation decisions (see Greendorfer, 2002). Contrary to extant literature and theory in the family domain, multiple parents in Study 1 reported that they felt it was important for their children to choose their own path in youth sport. Moreover, parents actively sought ways to support this differentiation among siblings in the family. When considering this result with the findings from Study 2, it seems that parents may be unique contributors to the differentiation behaviors of their young athletes.

One way to conceptualize this type of support from parents is as “parent-initiated differentiation.” Parent-initiated differentiation is different from the well-studied construct “parent differential treatment,” which is the process of parents treating their children different from one another (Feinberg & Hetherington, 2000). In contrast, parent-initiated differentiation can be operationalized as parents’ direct support of siblings’ efforts to discover their own unique identity or niche. What is unique about this type of
support is that it can be distributed fairly evenly among siblings, regardless of the
achievement domain, the child’s participation goals, or her/his ability. Indeed, among
parent participants in Study 1, there were multiple reports of parents encouraging both
siblings to find and pursue their own interest in youth sport. This was largely manifest as
parents supporting both children equally in their youth sport (and in some cases, non-
sport) endeavors. Many youth participants also reported that they felt that their parents
treated them equally and fair, which contradicts what we would expect from parents who
engage in differential treatment (see Feinberg & Hetherington, 2000; Jensen &
Whiteman, 2014; Meunier et al., 2012).

Parent-initiated differentiation among siblings is an important concept to consider
because it may, in fact, be unique to extracurricular activities such as organized youth
sport. Because youth sport is viewed as a setting where youth are able to learn and grow
in socially acceptable ways (Holt & Knight, 2014), and because there are a myriad
participation options, parents may not only allow, but encourage, each child to choose
something they like and feel comfortable participating in. It may therefore be that the
process of parent-initiated differentiation increases the odds (perhaps through the
mechanism of reinforcement) of youth choosing different sport participation pathways.
This process also may be unique to Western culture, where an individualistic (rather than
familial or collective) identity is sought and celebrated.

Together, the findings from these two studies inform a broader and deeper
understanding of family level influences in organized youth sport. Such understanding
contributes meaningfully to the knowledge base in that it provides evidence of the
relative contributions of sibling modeling and differentiation in organized youth sport. The literature in this area would further benefit from longitudinal investigations that examine sibling and parent influence across the developmental spectrum of youth sport (see Côté, 1999). Such work would provide time-sequenced information concerning the impact of sibling (and parent) influence on youth’s sport participation choices and experiences. This represents a key step in the design of intervention strategies to reduce negative sport experiences such as stress, burnout, and low enjoyment (Bean et al., 2014; Fraser-Thomas et al., 2005).

Critical analysis of this dissertation is important, as it has the potential to shape future research efforts examining siblings in sport. As such, several limitations of these studies are acknowledged, many of which represent key limitations of the broader youth sport literature. First, despite our efforts to recruit across a spectrum of youth sport contexts, the current dissertation studies were comprised of participants drawn primarily from White, upper-middle class, educated families. More work is needed on racially diverse samples with representation across a wide range of socioeconomic strata (Mertens, 2010). Study 1 also relied solely on participants from families with two involved sport parents. While two-parent families with a mother and father were specifically recruited because of potential differences in father involvement (see Coakley, 2010), sampling only traditional families with two involved parents may result in overlooking other types of family situations and structures that exist in youth sport settings across the country. Indeed, in light of the changing patterns of family demographics (U.S. Census Bureau, 2008), families should not be viewed as having
uniformity across experiences and functions. When striving to examine all the different family forms that exist within American youth sport contexts, future research could consider single-parent and step-parent households, extended family caregivers such as grandparents non-blood kin, as well as LGBTQ families. Studies sampling these family strata could explore whether sibling influence or parent involvement are invariant across these groups, and in doing so would address an important developmental research gap.

The current dissertation studies also draw on a relatively small temporal period of sibling interaction. In Study 1, participants were recruited from families with a target sibling aged 12-years-old and a proximal sibling ranging from 9- to 15-years-old. In Study 2, data were collected from youth aged 10 to 15 years and their parents. These recruitment parameters offer limited understanding of sibling influence during early-to-middle childhood and again during middle-to-late adolescence. Sibling modeling and differentiation represent a theoretically grounded area of empirical interest in youth sport, and examining sibling influence across youth’s competitive athletic careers has the potential to move the literature forward. Multiple complementary studies or a large-scale developmental project addressing this aim would provide a key extension to this dissertation as well as past research, allowing scholars to understand issues of practical interest, the developmental trajectories of siblings and parents, and potentially the proximal and distal influences of youth sport teams and communities.

An additional limitation of the present dissertation is that it exclusively addresses sibling influence within the organized youth sport context. Sibling influence and related concepts such as parent-initiated differentiation may be uniquely visible in extracurricular
contexts such as organized youth sport. Indeed, because youth sport provides a variety of participation options, this context gives parents the option to encourage youth to choose something that matches their abilities, interests, and identity. One achievement context that parent-initiated differentiation may not be as applicable to is the academic setting. As opposed to youth sport, it seems that parents typically provide the same type of encouragement for siblings to do well in all of their school courses as opposed to allowing and/or encouraging their children to choose which subjects they will excel in or focus on.

Outside of achievement contexts such as sport and school, parent-initiated differentiation does not seem to apply. For example, when it comes to risky behavior and substance abuse, parents do not encourage siblings to choose a unique niche. Rather, parents seem to encourage adaptive behavior and positive identity formation. In doing so, parents may engage in processes that orchestrate their children’s environment and activities (Feinberg et al., in press). The term orchestration refers to “the situations and contexts in which hands-on, direct parenting interactions take place” (p. 11). This literature suggests that parents are often prone to choose activities for children that they can share. It is likely that parents do this, even unknowingly, for reasons related to the provision of tangible (e.g., transportation) and intangible (e.g., avoidance of ego depletion) support. Despite this understanding, the literature has yet to account for parents’ purposeful efforts to encourage their children to choose different pathways or niches. In direct contrast to this work in other settings, the present studies suggest that
parents may orchestrate youths’ experiences in sport via the initiation (or direct reinforcement) of differentiation processes.

Admittedly, sibling influence (via modeling and differentiation) is linked to a number of other personal and family domains as well as the natural course of development itself. In the family literature, life course theory may offer an opportunity to tease out the contributions of various micro/mesosystems (e.g., home, school, sport) to sibling modeling and differentiation. Several fundamental principles characterize the life course perspective: (a) location, (b) timing, (c) heterogeneity among individuals, (d) social ties, (e) agency, and (f) past experiences (see Bengston, Elder, & Putney, 2005). In addressing these six factors, sibling scholars should pay particular attention to the concept of “linked lives” (Elder, 1998), taking into account the reciprocal impact of parents and children on one another (see Dorsch et al., 2009, 2015).

Although Study 1 provides a rich description of multiple family members’ experiences and Study 2 enhances understanding of sibling modeling and differentiation in organized youth sport, future work should aim to satisfy more stringent standards for causal interpretation. Such work would allow scholars to draw more definitive conclusions about the role of sibling influence (as well as additional family factors) in youth sport. One study that could naturally follow from this dissertation work would be an investigation of parent-initiated differentiation. Interview data from Study 1 suggest that parents have the potential (and perhaps inclination) to orchestrate youths’ experiences in sport by encouraging modeling and/or differentiation in sport. However, given the non-experimental design employed in that study, it is difficult to discern the
cause of younger siblings’ sport-related decisions. To fully explicate the impact of older siblings and parents on younger siblings’ sport participation choices, future research would benefit from controlled studies aimed at isolating the impact of these social actors on youth in sport.

Importantly, this dissertation points to a number of potentially fruitful research paths or strategies. First, future research on this topic should continue to consider how best to test theory-related influence processes (i.e., modeling and differentiation) in sport. Doing so may help uncover alternative patterns of sport-related influence within the family unit. Specifically, because sister-sister dyads tend to exhibit more relational warmth (Dunn, 2007), it may be beneficial for future researchers to consider the actual biological sex of the sibling dyad rather than only a dichotomous variable of same versus mixed biological sex. Indeed, it is plausible that there are nuanced differences between male-male, female-female, male-female, and female-male dyads, and that these differences are moderated by the age gap between siblings.

A second study topic to consider revolves around theories that would help explain other factors that can influence siblings’ relationships and influence. One potential theoretical framework is that of biocultural theory, more recently known as the process-person-context-time (or PPCT) model of human development (Bronfenbrenner 1977, 1986, 2005; Bronfenbrenner & Morris, 1998; Tudge, Mokrova, Hatfield, & Karnik, 2009). Employing this theoretical framework would open the possibility of examining other factors (e.g., sibling communication, athlete temperament, sport organization ethos, sport level, friends) that might influence the sibling dynamics in youth sport.
The value of scientific inquiry lies in whether it sheds light on the social and individual processes that occur in a specific context thus explicating something interesting, important, or useful (Cronbach, 1975; Yardley, 2008). This interdisciplinary dissertation has drawn from the family, developmental, and sport psychology literatures, has incorporated qualitative and quantitative methodologies, and has employed multiple epistemological lenses to address sibling influence processes in organized youth sport. Taken together, findings from both studies provide support for sibling modeling and differentiation, and suggest a need for continued interdisciplinary efforts to understand sibling relationships and family influence in the organized youth sport context. Such work would foster a more nuanced understanding of socialization processes, the family, and human development in sport.
REFERENCES


https://dx.doi.org/10.1016/j.copsyc.2017.03.011.


doi:https://doi.org/10.17161/jas.v3i3.6518


http://doi.org/10.1017/S0140525X00055941


doi:10.1016/j.psychsport.2005.08.006


http://dx.doi.org/20.1300/J002v40n02_08


APPENDICES
Appendix A
Study 1 Recruitment Materials

Example Email to Recreation Centers (Study 1)

Hello!

I hope you are doing well, and that the fall soccer season has begun smoothly.

I am one of Dr. Travis Dorsch's PhD students, and have had the opportunity to present __________ in the past. I really appreciate you giving us that opportunity, which helped me grow as a student and presenter.

Presently, I am working on my dissertation and am looking for a small number of families who would be interested in participating in interviews with me and/or a research assistant.

My dissertation revolves around family relationships, specifically, sibling relationships in youth sport. I am wondering if you happen to know of any families that have two parents, and at least two children, with one of the children being 12 years old and the other child ranging in age from 9-15 years of age? If so, would you be willing to send me their contact information so that I may reach out to them directly to ask them if they would like to participate in my study?

In addition, if you are interested, I have attached my recruiting script to this email, which gives more detail about my study.

Thank you so much for your support in all that we do in the Families in Sport Lab at Utah State University.

Sincerely,

Keith

Keith V. Osai
Doctoral Candidate
Department of Family, Consumer, and Human Development
Emma Eccles Jones College of Education and Human Services
Utah State University
keith.osai@aggiemail.usu.edu
Recruiting Script (Study 1)

Hello, I am here today to tell you about a research study being conducted by Dr. Travis Dorsch, an Assistant Professor in the Department of Family, Consumer, and Human Development at Utah State University. The purpose of the research is to find out more about sibling relationships in organized youth sport. My name is Keith Osai, I am a doctoral candidate working with Dr. Dorsch, and I will also be working on this project. Ultimately, we will be asking 14 families (56 total participants) in this research.

If you agree to be in this research study, you and your family will be asked to participate in interviews about your sport participation. These interviews are completely voluntary, will last for no more than 30 minutes, and will take place in a public location (i.e. library, university, recreation center).

This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. Participation in this research study may involve some added risks or discomforts due to sharing personal information regarding family and sibling relationships. There is a small risk of loss of confidentiality, but we will take steps to reduce this risk. These steps include storing interviews in a locked cabinet and transcribed on a password protected computer.

There is no direct benefit to you for participating in this research study. But, the proposed research is potentially beneficial because it will provide data that will contribute to families’ knowledge regarding family and sibling relationships in youth sport and may help future populations with similar issues and/or future researchers design interventions to help with family relationships in youth sport.

Please note that research records will be kept confidential, consistent with federal and state regulations. Only the primary investigator, research assistants will have access to the data which will be kept in a locked file cabinet or on a password protected computer. To protect your privacy, personal, identifiable information will be removed from study documents and replaced with a study identifier. Identifying information will be stored separately from data and will be kept until the conclusion of data analysis. Lastly, researchers are required to report any suspected child abuse or any intention you have to hurt yourself or others. The researcher, if ordered to do so by a court of law, may be required to disclose information you have provided.

We will make every effort to ensure that the information you provide as part of this study remains confidential. Your identity will not be revealed in any publications, presentations, or reports resulting from this research study. However, it may be possible for someone to recognize your particular story/situation/response (particularly applicable in focus group/ethnographic/oral history research projects).
We will collect your information through interviews and demographic surveys. Digital information will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage system. Physical content such as the demographic survey will be kept in a locked travel case until it is moved into a locked file cabinet at Utah State University.

Participation in this study is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits.

If you have questions about the research study itself, you may ask me here today, or you may contact Dr. Dorsch at Travis.Dorsch@usu.edu. If you have questions about your rights or would simply like to speak with someone other than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or irb@usu.edu.

Thank you for your attention. I have packets here that you may take if you are interested in participating in this research.

Thank you!
Example Email to Participants (Study 1)

Dear Parents,

On behalf of the Families in Sport Lab at Utah State University and with the permission of Terri Baker of Northern Utah United & Infinity Soccer, I would like to give you and your family the opportunity to participate in research and earn a $20 Gift Card!

Please see the flier below and contact me if you would like to participate!

Thank you and have a great day!
Example reply to email inquiries about participating (Study 1)

Hello _____,

Thank you for your interest in participating in this research study!

There are a few more questions that I need to ask you in order to determine whether or not your family will be selected to participate in this research study.

1. What are the ages and gender of your children that meet the criteria?

2. Do your children, who qualify for the study, play a sport?

3. Do any of your children, who qualify for the study, not participate in sport?

Thank you so much for your inquiry and interest in this study. I look forward to your response.

Sincerely,

Keith
Participant recruitment flyers (Study 1)
Appendix B
Informed Consent/Assent Forms

INFORMED CONSENT
Sibling Relationships in Youth Sport (Interview)

*Introduction/ Purpose* Dr. Travis Dorsch in the Department of Family, Consumer, and Human Development at Utah State University is conducting a research study to find out more about sibling relationships in organized youth sport. Keith Osai, a doctoral candidate in the Department of Family, Consumer and Human Development at Utah State University will also be working on this project as part of his dissertation research. You have been asked to take part because you/your family is involved in youth sport. There will be approximately 360 total participants in this research.

*Procedures* If you agree to be in this research study, you will be asked to participate in an interview with regards to sport participation. These interviews are completely voluntary, will last for no more than 30 minutes, and will take place in a public location (i.e. library, university, recreation center).

*Risks* Participation in this research study may involve some added risks or discomforts due to sharing personal information regarding family and sibling relationships. There is a small risk of loss of confidentiality, but we will take steps to reduce this risk. These steps include storing interviews in a locked cabinet and transcribed on a password protected computer.

*Benefits* The proposed research is potentially beneficial because it will provide data that will contribute to families knowledge regarding sibling relationships in youth sport.

Explanation & offer to answer questions Dr. Dorsch, Mr. Osai, or a research assistant has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may contact Dr. Dorsch at (435) 797-4565 or at Travis.Dorsch@usu.edu. You may also contact Mr. Osai at (650) 455–9312 or at keith.osai@aggiemail.usu.edu.
**INFORMED CONSENT**

*Sibling Relationships in Youth Sport (Interview)*

**Extra Cost(s)** Any cost associated with traveling to research cite will be covered by the participant.

*Voluntary nature of participation and right to withdraw without consequence*
Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits. If you decide to voluntarily withdraw from the study please email Keith Osai at keith.osai@aggiemail.usu.edu. You may be withdrawn from this study without your consent by the Primary Investigator or a student researcher if he/she feels threatened, detects any abuse or irresponsible acts toward the researcher, child participant(s), or anyone else involved with study.

*Confidentiality* Research records will be kept confidential, consistent with federal and state regulations. Only the primary investigator, research assistants will have access to the data which will be kept in a locked file cabinet or on a password protected computer in a locked room on the campus of Utah State University. To protect your privacy, personal, identifiable information will be removed from study documents and replaced with a study identifier. *Identifying information will be stored separately from data and will be kept until the conclusion of data collection. Personal identifiable information will be destroyed 4 years after the study is complete.* Lastly, researchers are required to report any suspected child abuse or any intention you have to hurt yourself or others. The researcher, if ordered to do so by a court of law, may be required to disclose information you have provided.

*IRB Approval Statement* The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.
INFORMED CONSENT

Sibling Relationships in Youth Sport (Interview)

*Copy of Consent* You have been given two copies of this Informed Consent. Please sign both copies and keep one copy for your files.

*Investigator Statement* “I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered.”

Signature of Researcher(s)

__________________________________________________________________________
Dr. Travis Dorsch Mr. Keith Osai
Principal Investigator Graduate Student Researcher
435-797-4565 650-455-9312
Travis.Dorsch@usu.edu keith.osai@aggiemail.usu.edu

Signature of Participant By signing below, I agree to participate.

__________________________________________________________________________
Participant’s signature Date
INFORMED CONSENT

Sibling Relationships in Youth Sport (Interview)

**Introduction/ Purpose**  Dr. Travis Dorsch in the Department of Family, Consumer, and Human Development at Utah State University is conducting a research study to find out more about sibling relationships in organized youth sport. Keith Osai, a doctoral candidate in the Department of Family, Consumer and Human Development at Utah State University will also be working on this project as part of his dissertation research. You have been asked to take part because you/your family is involved in youth sport. There will be approximately 56 total participants in this research.

**Procedures**  If you agree to be in this research study, you will be asked to participate in an interview with regards to sport participation. These interviews are completely voluntary, will last for no more than 30 minutes, and will take place in a public location (i.e. library, university, recreation center)

**Risks**  Parts of the interview may make you or your child feel uncomfortable about her/his responses and/or question her/his own attitudes/behaviors. We will minimize this potential by clearly communicating the voluntary and confidential nature of the study. Though the research topic is not sensitive, breach of confidentiality is an inherent risk to most research. The confidentiality section below describes the procedures used to manage this risk.

**Benefits**  The proposed research is potentially beneficial because it will provide data that will contribute to families’ knowledge regarding sibling relationships in youth sport.

**Explanation & offer to answer questions**  Dr. Dorsch, Mr. Osai, or a research assistant has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may contact Dr. Dorsch at (435) 797-4565 or at Travis.Dorsch@usu.edu. You may also contact Mr. Osai at (650) 455–9312 or at Keith.Osai@aggiemail.usu.edu.
INFORMED CONSENT
Sibling Relationships in Youth Sport (Interview)

Voluntary nature of participation and right to withdraw without consequence
Participation in this research is entirely voluntary. You may refuse to allow your child to participate in this study or withdraw her/him at any time without consequence or loss of benefits.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only the primary investigator and research assistants will have access to the data, which will be kept in a locked file cabinet or on a password-protected computer in a locked room on the campus of Utah State University. To protect your privacy, personal, identifiable information will be removed from study documents and replaced with a study identifier after your child’s surveys are matched with your participation materials. Identifying information will be stored separately from data and will be kept until the conclusion of data collection. Personal identifiable information will be destroyed 4 years after the study is complete. Lastly, researchers are required to report any suspected child abuse or any intention you have to hurt yourself or others. The researcher, if ordered to do so by a court of law, may be required to disclose information you have provided.

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Copy of consent You have been given two copies of this Informed Consent. Please sign both copies and keep one copy for your files.

Investigator Statement “I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered.”
INFORMED CONSENT

Sibling Relationships in Youth Sport (Interview)

Signature of Researcher(s)

Dr. Travis Dorsch
Principal Investigator
435-797-4565
Travis.Dorsch@usu.edu

Mr. Keith Osai
Graduate Student Researcher
650-455-9312
Keith.Osai@aggiemail.usu.edu

Signature of Participant’s Parent

By signing below, I agree to allow my child to participate.

_______________________________  _________________________________
Participant’s signature  Date

Child/Youth Assent: I understand that my parent(s) or guardian(s) are aware of this research study and that they have given permission for me to participate. I understand that it is up to me to participate even if they say yes. If I do not want to be in this study, I do not have to and no one will be upset if I don’t want to participate or if I change my mind later and want to stop. I can ask any questions that I have about this study now or later. By signing below, I agree to participate.

_______________________________  _________________________________
Appendix C

Parent Demographic Survey
Please answer the following questions about you, your child, your family, and the sport context in which your child participates. This section is for your child who is 12 years old.

Your age:

__________ years

Your sex:

O Male
O Female

Your child’s sex:

O Male
O Female

Relationship to child:

O Biological parent
O Step-parent
O Adoptive parent
O Foster parent
O Grandparent
O Other _________________________

Your current personal relationship status:

O Married
O Single, never married
O Living with partner, not married
O Widowed
O Divorced
O Separated
O Other ______________________________

Please select your ethnicity.
O Hispanic or Latino
O Not Hispanic or Latino

Please select your race.

O American Indian / Alaskan Native
O Asian
O Black or African American
O White
Please indicate your annual household income.
O < 10,000
O $10,000 - $24,999
O $25,000 - $49,999
O $50,000 - $74,999
O $75,000 - $99,999
O $100,000 - $150,000
O > $150,000

In what organized sport(s) is your child participating currently?
____________________________________________________________

My child’s goal for this participation is more directed at:
O Fun and excitement
O Achieving elite status

In what organized sport(s) has your child participated over the last 12 months?
____________________________________________________________

It seems that our family’s activities revolve around our child’s sport participation?
O True
O False

Please answer the following questions about you, your child, your family, and the sport context in which your child participates. This section is for your child who is NOT 12 years old.

Your child’s age:

Your child’s sex:
O Male
O Female

Relationship to child:
O Biological parent
O Step-parent
O Adoptive parent
O Foster parent
O Grandparent
O Other ______________________________

Your current personal relationship status:

O Married
O Single, never married
O Living with partner, not married
O Widowed
O Divorced
O Separated
O Other ______________________________

Please select your ethnicity.
O Hispanic or Latino
O Not Hispanic or Latino

Please select your race.
O American Indian / Alaskan Native
O Asian
O Black or African American
O White
O More than one race
O Unknown / Other

Please indicate your annual household income.
O < 10,000
O $10,000 - $24,999
O $25,000 - $49,999
O $50,000 - $74,999
O $75,000 - $99,999
O $100,000 - $150,000
O > $150,000

In what organized sport(s) is your child participating currently?

................................................................................

My child’s goal for this participation is more directed at:

O Fun and excitement
O Achieving elite status

In what organized sport(s) has your child participated over the last 12 months?

................................................................................

It seems that our family’s activities revolve around our child’s sport participation?

O True
O False
THANK YOU for your participation!

Please hand your survey to the administrator.
Appendix D
Semi-Structured Interview Guides (Study 1)

Interview Protocol: Parent Perspectives on Sibling Relationships and Youth Sport
(Option 2a: Interview Guide for parent)

Time of interview:
Date:
Place:
Interviewer:
Interviewee:
Family member position of interviewee:
Check recording device to make sure it is recording well.
Give a brief description of the study

Questions:
1. Please describe your role in your family’s youth sport experience.
2. Please describe your relationship with each of your children (i.e. those participating in the research) in youth sport.
3. How has youth sport impacted each of your children?
4. Please describe the sibling relationship between your children (i.e. those participating in the research).
5. What impact has youth sport had on the children’s relationships with each other?
6. How do you think their relationship will impact their future participation in youth sport?
7. Is there anything else that you would like to say before we conclude this interview?

Thank you for participating in this interview. Your responses are confidential. If you have any questions, please contact Keith Osai at keith.osai@aggiemail.usu.edu. Thank you.
Interview Protocol: Youth Perspectives on Sibling Relationships and Youth Sport (Option 2b. Interview guide for both siblings)

Time of interview:
Date:
Place:
Interviewer:
Interviewee:
Family member position of interviewee:
Check recording device to make sure it is recording well.
Give a brief description of the study

Questions:
1. Please describe your participation in youth sport.
2. Please describe your siblings’ participation in youth sport.
3. Please describe your relationship with your sibling in youth sport (i.e. sibling participating in the research).
4. How has your relationship with your sibling affected your participation in youth sport?
5. How do you think your relationship with your sibling in youth sport will impact your future participation in youth sport?
6. Please describe the relationship between your parents and your sibling in youth sport (i.e. those participating in the research).
7. Is there anything else that you would like to say before we conclude this interview?

Thank you for participating in this interview. Your responses are confidential. If you have any questions, please contact Keith Osai at keith.osai@aggiemail.usu.edu. Thank you.
### Appendix E
Frequency of Respondent Home States

<table>
<thead>
<tr>
<th>State</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah</td>
<td>44</td>
</tr>
<tr>
<td>Indiana</td>
<td>9</td>
</tr>
<tr>
<td>California</td>
<td>37</td>
</tr>
<tr>
<td>Virginia</td>
<td>6</td>
</tr>
<tr>
<td>Colorado</td>
<td>8</td>
</tr>
<tr>
<td>Washington</td>
<td>11</td>
</tr>
<tr>
<td>Hawaii</td>
<td>6</td>
</tr>
<tr>
<td>Idaho</td>
<td>16</td>
</tr>
<tr>
<td>Texas</td>
<td>3</td>
</tr>
<tr>
<td>New Mexico</td>
<td>3</td>
</tr>
<tr>
<td>Arkansas</td>
<td>9</td>
</tr>
<tr>
<td>Montana</td>
<td>8</td>
</tr>
<tr>
<td>Florida</td>
<td>8</td>
</tr>
<tr>
<td>Nevada</td>
<td>8</td>
</tr>
<tr>
<td>Oregon</td>
<td>7</td>
</tr>
<tr>
<td>Arizona</td>
<td>9</td>
</tr>
<tr>
<td>North Carolina</td>
<td>5</td>
</tr>
<tr>
<td>South Carolina</td>
<td>4</td>
</tr>
<tr>
<td>Missouri</td>
<td>7</td>
</tr>
<tr>
<td>Wyoming</td>
<td>4</td>
</tr>
<tr>
<td>Michigan</td>
<td>7</td>
</tr>
<tr>
<td>Ohio</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>221</strong></td>
</tr>
</tbody>
</table>
Appendix F
Recruiting Email Templates Study 2

Email to youth sport stakeholders

Dear [NAME],

My name is Keith Osai and I am a PhD student at Utah State University. I am working on my dissertation and am looking for youth who would be interested in taking a short survey. I am writing to you today to ask for your assistance in forwarding my research flier to parents of your youth athletes and/or referring potential research participants.

My dissertation revolves around family relationships in youth sport, with an emphasis on siblings in youth sport. Below is a flier for this study and attached to this email is a recruiting script, which gives more detail about my study.

Would you be willing to support me by forwarding my research flier and survey link to parents of your youth athletes?

In an effort to help with sending my flier and survey link to parents of youth participants, I have created and attached an Email Template that you can use to send to parents of your youth athletes.

In addition, below is the survey link if you would rather send the link directly.

https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

If you have any questions about this research study, please feel free to contact me.

I look forward to your response!

Sincerely,

Keith

Keith V. Osai
Doctoral Candidate
Department of Family, Consumer, and Human Development
Emma Eccles Jones College of Education and Human Services
Utah State University
keith.osai@aggiemail.usu.edu
PARTICIPATE IN SPORT-RELATED RESEARCH

WE WANT TO LEARN MORE ABOUT YOUR FAMILY:

We are looking for 12-year-old Youth athletes who:
(a) Live at home with at least one parent and one older sibling.
(b) Have participated in an organized youth sport within the last 12 months.
(c) Have an older sibling within three years of age (12-15 years old) who also participates in an organized youth sport.

To participate in this research, use the following link:
https://asu.qualtrics.com/jfe/form/SV_0XWqKms8uFmL

For more information, please contact Erik Olson at 928-523-1641 or ets.001@email.apsu.edu or the Principal Investigator, Dr. Traci Beets, at ets.001@email.apsu.edu

(3rd December 2003)
Title: Youth Sport Research

Email:

Dear Parents,

The Families in Sport Lab at Utah State University would like to give your child the opportunity to participate in research!

They are looking youth athletes 11 to 13 years-old who:

- Live at home with at least one parent and one older sibling.
- Have participated in an organized youth sport within the last 12 months.
- Have an older sibling within three years of age who also participates in an organized youth sport.

If your child would like to participate in this research study please click on the following link to access the survey and give your child permission to participate.

https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

Participation in this research is completely optional.

Please see the attached flier for more information.

Thank you and have a great day!
Email to Parents who have expressed interest in participating

Dear [NAME],

Thank you for expressing interest in participating in our research study.

Please click on the link below to access our survey.

https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

If you have any questions about participation in this survey, please feel free to contact me.

Thank You!

Keith

Keith V. Osai
Doctoral Candidate
Department of Family, Consumer, and Human Development
Emma Eccles Jones College of Education and Human Services
Utah State University
keith.osai@aggiemail.usu.edu
Email to Families who were referred by Administrators or other individuals

Dear [NAME]

[NAME] sent me your contact information and informed me that you would be interested in participating in my research study.

If your son or daughter would like to participate in my research study, please click on the link below to access the online survey.

https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

If you have any questions about participation in this survey, please feel free to contact me.

Thank You!

Keith

Keith V. Osai
Doctoral Candidate
Department of Family, Consumer, and Human Development
Emma Eccles Jones College of Education and Human Services
Utah State University
keith.osai@aggiemail.usu.edu
Email template to individuals who would like to share the research study flier and/or survey link with others

Dear [NAME],

Thank you for wanting to send my survey link to individuals or groups that you think would be interested in participating in my research study.

I have included the survey link below and attached the study flier for you to forward.

https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

If you have any questions about participation in this survey, please feel free to contact me.

Thank You!

Keith

Keith V. Osai  
Doctoral Candidate  
Department of Family, Consumer, and Human Development  
Emma Eccles Jones College of Education and Human Services  
Utah State University  
keith.osai@aggiemail.usu.edu
We are looking for 12 year old youth athletes who:

(a) Live at home with at least one parent and one older sibling.
(b) Have participated in an organized youth sport within the last 12 months.
(c) Have an older sibling within three years of age (12-15 years old) who also participates in an organized youth sport.

To participate in this research, use the following link: https://usu.co1.qualtrics.com/jfe/form/SV_9XKqkinxSuPriMB

For more information, please contact Keith Osai at keith.osai@aggiemail.usu.edu or Dr. Travis Dorsch at Travis.Dorsch@usu.edu

Utah State University
Families in Sport Lab
IRB Protocol #8995
*Introduction/ Purpose* Dr. Travis Dorsch in the Department of Family, Consumer, and Human Development at Utah State University is conducting a research study to find out more about sibling relationships in organized youth sport. Keith Osai, a doctoral candidate in the Department of Family, Consumer and Human Development at Utah State University will also be working on this project as part of his dissertation research. You have been asked to take part because you/your family is involved in youth sport. There will be approximately 220 total participants in this research.

*Procedures* If you agree to let your child participate in this research study, you will be asked to complete a survey before, during, or after the sport season. Completion of surveys should last no longer than 20 minutes, and can be accessed anywhere that you have internet connection.

*Risks* Participation in this research study may involve some added risks or discomforts due to sharing personal information regarding family and sibling relationships. There is a small risk of loss of confidentiality, but we will take steps to reduce this risk.

*Benefits* The proposed research is potentially beneficial because it will provide data that will contribute to families knowledge regarding sibling relationships in youth sport.

**Explanation & offer to answer questions** Dr. Dorsch, Mr. Osai, or a research assistant has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may contact Dr. Dorsch at (435) 797-4565 or at Travis.Dorsch@usu.edu. You may also contact Mr. Osai at (650) 455–9312 or at keith.osai@aggiemail.usu.edu.
Extra Cost(s) Any cost associated with traveling to research site will be covered by the participant.

*Voluntary nature of participation and right to withdraw without consequence* Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits. If you decide to voluntarily withdraw from the study please email Keith Osai at keith.osai@aggiemail.usu.edu. You may be withdrawn from this study without your consent by the Primary Investigator or a student researcher if he/she feels threatened, detects any abuse or irresponsible acts toward the researcher, child participant(s), or anyone else involved with study.

*Confidentiality* Research records will be stored in Qualtrics and will have no identifying markers tied to responses. In the case that there is physical data with identifying information those research records will be kept confidential, consistent with federal and state regulations. Only the primary investigator, research assistants will have access to any physical data which will be kept in a locked file cabinet or on a password protected computer in a locked room on the campus of Utah State University. To protect your privacy, personal, identifiable information will be removed from study documents and replaced with a study identifier. Identifying information will be stored separately from data and will be kept until the conclusion of data collection. Personal identifiable information will be destroyed 4 years after the study is complete. Lastly, researchers are required to report any suspected child abuse or any intention you have to hurt yourself or others. The researcher, if ordered to do so by a court of law, may be required to disclose information you have provided.

*IRB Approval Statement* The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

*Copy of Consent* You have been given two copies of this Informed Consent. Please sign both copies and keep one copy for your files.

*Investigator Statement* “I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered.”

Signature of Researcher(s)

_______________________________  ______________________________
Dr. Travis Dorsch               Mr. Keith Osai
Signature of Participant By signing below, I agree to participate.

________________________________________  __________________________
Participant’s signature                       Date
INFORMED CONSENT

Sibling Relationships in Youth Sport (Survey)

Introduction/ Purpose Dr. Travis Dorsch in the Department of Family, Consumer, and Human Development at Utah State University is conducting a research study to find out more about sibling relationships in organized youth sport. Keith Osai, a doctoral candidate in the Department of Family, Consumer and Human Development at Utah State University will also be working on this project as part of his dissertation research. You have been asked to take part because you/your family is involved in youth sport. There will be approximately 220 total participants in this research.

Procedures If you agree to be in this research study, you will be asked to complete an online survey before, during, or after the sport season.

Risks Parts of the survey may make your child feel uncomfortable about her/his responses and/or question her/his own attitudes/behaviors. We will minimize this potential by clearly communicating the voluntary and confidential nature of the study. Though the research topic is not sensitive, breach of confidentiality is an inherent risk to most research. The confidentiality section below describes the procedures used to manage this risk.

Benefits The proposed research is potentially beneficial because it will provide data that will contribute to families knowledge regarding sibling relationships in youth sport.

Explanation & offer to answer questions Dr. Dorsch, Mr. Osai, or a research assistant has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may contact Dr. Dorsch at (435) 797-4565 or at Travis.Dorsch@usu.edu. You may also contact Mr. Osai at (650) 455-9312 or at Keith.Osai@aggiemail.usu.edu.
Voluntary nature of participation and right to withdraw without consequence

Participation in this research is entirely voluntary. You may refuse to allow your child to participate in this study or withdraw her/him at any time without consequence or loss of benefits.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only the primary investigator and research assistants will have access to the data, which will be kept in a locked file cabinet or on a password-protected computer in a locked room on the campus of Utah State University. To protect your privacy, personal, identifiable information will be removed from study documents and replaced with a study identifier after your child’s surveys are matched with your participation materials. Identifying information will be stored separately from data and will be kept until the conclusion of data collection. Personal identifiable information will be destroyed 4 years after the study is complete. Lastly, researchers are required to report any suspected child abuse or any intention you have to hurt yourself or others. The researcher, if ordered to do so by a court of law, may be required to disclose information you have provided.

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Copy of consent You have been given two copies of this Informed Consent. Please sign both copies and keep one copy for your files.

Investigator Statement “I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered.”

Signature of Researcher(s)

Dr. Travis Dorsch
Principal Investigator
435-797-4565
Travis.Dorsch@usu.edu

Mr. Keith Osai
Graduate Student Researcher
650-455-9312
Keith.Osai@aggiemail.usu.edu

Signature of Participant’s Parent By signing below, I agree to allow my child to participate.
Participant’s signature                                      Date

Child/Youth Assent: I understand that my parent(s) or guardian(s) are aware of this research study and that they have given permission for me to participate. I understand that it is up to me to participate even if they say yes. If I do not want to be in this study, I do not have to and no one will be upset if I don’t want to participate or if I change my mind later and want to stop. I can ask any questions that I have about this study now or later. By signing below, I agree to participate.

________________________________________  ________________________________
Appendix H
Survey Instrument (Study 2)

Please answer the following questions about you, your brother/sister, and the sports you participate in.

1. What is your birthdate?
   M _____ / D _____ / Y __________

2. Your sex:
   O Male
   O Female

3. Please select your ethnicity.
   O Hispanic or Latino
   O Not Hispanic or Latino

4. Please select your race.
   O American Indian / Alaskan Native
   O Asian
   O Black or African American
   O White
   O More than one race
   O Unknown / Other

5. What city and state do you currently reside?
   City_______ State_______

6. What grade are you in?
   __________

7. How many sports (team or individual) have you played in the last 12 months?
   __________

8. What is your main sport?
   ____________________________

9. What sport are you currently playing?
   ____________________________
10. On a scale from 0 (NOT FUN) to 10 (FUN) please rate the following statements.

My goal for playing is for **fun and excitement**: __________
My goal for playing is for **achieving elite status**: __________

11. Please fill in the following information about ALL of your siblings who live at home:

<table>
<thead>
<tr>
<th>Sibling’s Biological Sex</th>
<th>Sibling’s Birthdate</th>
<th>Number of sport teams he/she has played on in the past year</th>
<th>His/her Main sport</th>
<th>His/her Current Sport(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Circle one)</td>
<td>(MM / DD / YYYY)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>09 / 04 / 2006</td>
<td>4</td>
<td>Basketball</td>
<td>Soccer</td>
</tr>
</tbody>
</table>

1. / /

12. How many parents live in your household:

O Two parents in the home
O Mother only in the home
O Father only in the home
O Other ________________________________
This portion of the survey includes comments about your relationship with the sibling that you listed at the beginning of the survey. Please indicate how often or how much the following statements happen between you and your sibling.

<table>
<thead>
<tr>
<th></th>
<th>Never or Hardly Ever</th>
<th>A Little</th>
<th>Sometimes</th>
<th>Pretty Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

01. Brothers and sisters sometimes cause trouble or start fights or arguments with one another, even if they love each other a lot. How often would you say that your sibling starts fights or causes trouble for you?

02. How often does your sibling get mad at or angry with you?

03. Kids sometimes hurt their sibling on purpose like by pushing, punching, or hitting them. How often does your sibling do these kinds of things to you?

04. Some kids are mean to their sibling sometimes, even if they really care about them. How often would you say your sibling does things to you like tease you, bug you, or call you names?

05. Kids sometimes go into their sibling’s room or take their things without permission. How often would you say your sibling does this to you?

06. Some kids share secrets with their brothers and sisters, and other kids don’t. How often do you share secrets with your sibling?

07. What about doing nice things like helping or doing favors for your sibling? How often do you do these kinds of things?

08. How much do you teach your sibling things or help her/him figure something out?
Never or Hardly at all | A Little | Sometimes | Pretty Often | Always
--- | --- | --- | --- | ---
1 | 2 | 3 | 4 | 5

09. Most kids are supportive of their siblings sometimes even though they fight at other times. How often are you physically affectionate with your sibling, such as hugging, kissing, or holding hands?

10. How often do you feel that your sibling is a pretty cool?

11. Sometimes kids feel like sharing their things and other times they don’t. How often do you share your things with your sibling when she/he wants to play with them or borrow them?

12. How about if your sibling is hurt or upset, how often do you try to make her/him feel better?

**This portion of the survey includes comments about the sibling that you listed at the beginning of the survey. Please indicate to what extent you agree or disagree with each statement.**

Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree
--- | --- | --- | --- | ---
1 | 2 | 3 | 4 | 5

01. I play different sports so I won’t be like my sibling.

02. My sibling sets a bad example for me in sports.

03. My sibling includes me in sports activities with her/his friends.

04. I try to choose different sports to play than my sibling.

05. My sibling sets an example for how to play sports.
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>06.</strong> My sibling tells me how I should play in a particular sport.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>07.</strong> My sibling provides a model for how I should play sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>08.</strong> I’ve learned from my sibling’s mistakes when playing sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>09.</strong> After watching how my sibling is turning out, I plan to do things differently in sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>10.</strong> My sibling includes me in her/his activities outside of sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>11.</strong> I want to play different sports than my sibling.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>12.</strong> My sibling encourages me to get involved in certain sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>13.</strong> I want people to know that I am not the same as my sibling.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>14.</strong> From watching my sibling, I have learned how to do things in sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>15.</strong> I try to play different sports than my sibling</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>16.</strong> My sibling gives me advice on how to play sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>17.</strong> I try to be good at sports that my sibling isn’t good at.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>18.</strong> It’s hard to live up to my sibling’s example in sports so I try to be different</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
For each of the following statements, please fill in the bubble corresponding to the number that best describes the relationship between you and your FATHER in sport. If you do not have a FATHER please skip to the next section.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>My father makes me feel better after talking over my sport-related worries with me.</td>
<td>Really Unlike Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father sees my good points as an athlete more than my faults.</td>
<td>Sort of Unlike Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father speaks to me in a warm and friendly voice during my sport.</td>
<td>Sort of Like Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father understands my problems and worries about sports.</td>
<td>Really Like Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father is able to make me feel better when I am upset about my sport.</td>
<td>Really Unlike Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father cheers me up when I am sad about sports.</td>
<td>Sort of Unlike Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father has a good time with me during my sport.</td>
<td>Sort of Like Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father tells or shows me that he likes me just the way I am as an athlete.</td>
<td>Really Like Us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father and I get mad at each other about sports.</td>
<td>Not at all true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father and I fight about sports.</td>
<td>A little true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My father and I have arguments about sports.</td>
<td>Somewhat true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pretty true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = Not at all true, 2 = A little true, 3 = Somewhat true, 4 = Pretty true, 5 = Really true
For each of the following statements, please fill in the bubble corresponding to the number that best describes the relationship between you and your MOTHER in sport. If you do not have a MOTHER please skip to the next section.

<table>
<thead>
<tr>
<th></th>
<th>Really Unlike Us</th>
<th>Sort of Unlike Us</th>
<th>Sort of Like Us</th>
<th>Really Like Us</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

01. My mother makes me feel better after talking over my sport-related worries with me.

02. My mother sees my good points as an athlete more than my faults.

03. My mother speaks to me in a warm and friendly voice during my sport.

04. My mother understands my problems and worries about sports.

05. My mother is able to make me feel better when I am upset about my sport.

06. My mother cheers me up when I am sad about sports.

07. My mother has a good time with me during my sport.

08. My mother tells or shows me that he likes me just the way I am as an athlete.

<table>
<thead>
<tr>
<th></th>
<th>Not at all true</th>
<th>A little true</th>
<th>Somewhat true</th>
<th>Pretty true</th>
<th>Really true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

01. My mother and I get mad at each other about sports.

02. My mother and I fight about sports.

03. My mother and I have arguments about sports.
This portion of the survey includes comments about how your FATHER treats you and the sibling you listed at the beginning of the survey. Please answer how often or how much the following statements happen. If you do not have a FATHER please skip to the next section.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. In sport, my father treats my sibling like his favorite more than he treats me that way.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>02. My father treats my sibling better than he treats me because of sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

This portion of the survey includes comments about how your MOTHER treats you and the sibling you listed at the beginning of the survey. Please answer how often or how much the following statements happen. If you do not have a MOTHER please skip to the next section.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. In sport my mother treats my sibling like her favorite more than she treats me that way.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>02. My mother treats my sibling better than she treats me because of sports.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
BACKGROUND

Contact Information

Keith V. Osai, Ph.D
keith.osai@aggiemail.usu.edu

Educational History

August 2018  Doctor of Philosophy
Utah State University, Human Development and Family Studies
Specialization: Sibling Relationships
Committee Chair: Travis E. Dorsch, Ph.D.

August 2012  Master of Science
Utah State University, Jon M. Huntsman School of Business
Human Resources

August 2008  Bachelor of Science
Brigham Young University
Sociology

June 2004  Associate of Arts
College of San Mateo
Liberal Studies

Professional Experience

2008-2010  Academic Program Coordinator/Advisor
Multicultural Student Services
Utah State University, Logan, Utah

Additional Work Experience

2011  Graduate Intern
Campus Life, Dean of Students Office
Brigham Young University, Provo, Utah

2006-2008  Office Specialist
Multicultural Student Services
Brigham Young University, Provo, Utah
RESEARCH

Refereed Publications


Manuscripts Under Review


In Progress Research


Refereed Presentations


**Evidence-based Curricula**


based strategies for parenting in organized youth sport. Logan, UT: Utah State University Families in Sport Lab.


**TEACHING**

**Classroom Instruction**

- **Fall 2015**  
  HDFS 1010: *Balancing Work and Family* (Team-taught, in person and online)

- **Spring 2015, Fall 2014**  
  HDFS 1500: *Human Development Through the Lifespan*

- **Fall 2009, Fall 2008**  
  MGT 1160: *Life Skills* (Multicultural Student Services)

**Invited Academic Lectures**

- **February 27, 2017**  
  HDFS 6910/7910 *Parenting*  
  (Parenting Siblings)

- **October 26, 2016**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Sibling Relationships Through the Lifespan)

- **February 23, 2016**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Sibling Relationships)

- **October 2, 2015**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Sibling Relationships)

- **April 22, 2014**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Physical Development in Late Adulthood)

- **March 6, 2014**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Socioemotional Development in Middle and Late Childhood)

- **February 20, 2014**  
  HDFS 1500 *Human Development Through the Lifespan*  
  (Socioemotional Development in Early Childhood)

- **February 14, 2014**  
  HDFS 2400 *Marriage and Family Relationships*  
  (Sexual Intimacy)

- **October 8, 2013**  
  HDFS 2450 *The Consumer and the Market*  
  (The Capitalistic American Marketplace)
September 17, 2013  HDFS 2450 *The Consumer and the Market*  
(Rip Offs and Fraud)

**Undergraduate Research Mentoring**

Fall 2017 - present  Haylee Downey
Fall 2017 - present  Taylor Wilding

---

**SERVICE**

**Professional Outreach**

August 2015  Walled Lake Athletic Conference Symposium  
Walled Lake, MI  
Effective Coaching Strategies in Organized Youth Sport (Broadcast)

June 2015  North American Society for the Psychology of Sport and Physical Activity (NASPSPA) Annual Conference (Portland, OR)  
Graduate Student Registration Assistant

**Community Outreach**

March 2018  Utah Recreation and Parks Association (URPA)  
Annual Conference (Provo, UT)  
“I love to watch you play” Presenting a Curriculum for Sport Parents

Sept 2017  Utah Recreation and Parks Association  
Director’s Retreat (Draper, UT)  
Families and Youth Sport Lab and URPA Collaboration

March 2015  Cache Valley Soccer Expo  
Logan, UT  
Effective Coaching Strategies in Organized Youth Sport

Sep 2011-Dec 2011  Bridger Elementary, Reading Tutor (Logan, UT)

---

**PROFESSIONAL DEVELOPMENT**

Fall 2016  Graduate Instructors Forum,
Spring 2016  Department of Human Development and Family Studies, USU
Fall 2015  by Troy Beckert

September 20, 2016  Grant Proposal Workshop
February 10, 2016  Office of Research and Graduate Studies, USU
February 3, 2015  by M.S. (Peg) AtKisson
February 24, 2016  Graduate Training Series
            Three Merrill-Cazier Library Resources That Will Make Your Life Easier
            by Becky Thoms, Britt Fagerheim, Betty Rozum
February 11, 2016  Data Management Workshop
            by Betty Rozum
January 21, 2016  Graduate Training Series
            Three Essential Steps to Beautify Your Graphs and Data Plots
            by Dr. Abby Benninghoff
February 15, 2015  Graduate Training Series
            How to Create Gorgeous Slides
            by Anna McEntire

**AWARDS**

January 2017  Department of Human Development and Family Studies (Logan, UT)
            Graduate Student of the Month