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Kelly Jane Stepura
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The Dissertation Committee for Kelly Jane Stepura Certifies that this is the approved version of the following dissertation:

Change in Foster Care: The Impact of Relationships and Environments on Foster Child Functioning

Committee:

A. J. Schwab, Supervisor

Donald Baumann

King Davis

Kay Hodges

Ruth McRoy

Elizabeth Pomeroy

**Change in Foster Care: The Impact of Relationships and
Environments on Foster Child Functioning**

by

Kelly Jane Stepura, B.A.; M.S.W.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

May 2010

Dedication

For my grandma, who loved children,
and for all the children who don't have someone like her.

Acknowledgements

I would like to thank the participating agencies for their willingness to share their data. Specifically, I would like to thank Shane Frazier from Omni, Isabel Rios from DePelchin, and Craig Wagoner from CHSWV for taking the time to work with me and answer my questions. Additionally, I want to recognize the KaleidaCare team for all their support. Alistair Deakin and Angela Lee provide an environment in which spending time on things that matter is not only acceptable but encouraged. Special thanks to Chip Bolyard for being so supportive and always willing to dig in and figure things out.

I am truly grateful to Nate Marti, who was a tremendous resource for statistical consultation. I would also like to thank the dissertation committee members. It is gratifying to be supported by a group of people who won't hesitate to challenge you but who always do so with your best interests at heart. Thanks to Dr. Ruth McRoy, who offered me the opportunity to work with her adoption team at the University. Her ability to simultaneously pay attention to details and grasp the bigger picture showed me how a great leader can focus and motivate a team.

Special thanks to Dr. Kay Hodges for her availability for questions and feedback. Despite her hectic schedule, she always makes time for me. I'd also like to express my thanks to Dr. King Davis, Executive Director of the Hogg Foundation during my tenure as a Doctoral Research and Policy Fellow, for his mentorship in how sound scholarship

can affect policy change. Many thanks to Dr. Elizabeth Pomeroy, who supervised my first doctoral appointment as a research assistant at the University. She exposed me to projects outside my area of expertise, furthering my appreciation of cross-field collaboration and of capitalizing on the similarities that exist across different areas of study. My gratitude also goes out to Dr. Donald Baumann, who was the first to show me how interesting and fun good research can be. I look forward to a future filled with intriguing and fulfilling challenges because of him. No amount of gratitude for that seems like enough.

My committee chair, Dr. Schwab, has been a mentor and source of guidance since I was an undergraduate. I would like to thank him for his wisdom and direction throughout the years, and for his accessibility and wonderful sense of humor during this process, both of which were absolute necessities. I also now appreciate that my offer of a blank check in order to succeed in the defense was in vain. If only I had more money in the bank...

Additionally, many thanks to Dr. Stephanie Rivaux. Your friendship through the last seven years has facilitated a level of trust in me that I wasn't capable of before. Thank you for trying to keep my head on straight through the complexities of life. My deepest gratitude also goes out to Kathleen Casey. I've never known someone so giving and with such clarity of thinking and benevolence of spirit. Your friendship is such a gift and the final stages of this dissertation would have been miserable without you.

I would also like to thank my parents, James and June Gober for their support through one of the most trying years of my life. Special thanks to my mother, Linda Gober, for her encouragement. She is probably the only other person in the world who was as anxious for me to finish this dissertation as I was. Many thanks to my sister, Allison Gober. I'm grateful to have been able to grow up with you by my side; you are

the most amazing friend I could ever ask for. To Cagney and Lacey, thanks for the unconditional love and I promise to take you for a long hike when this is over. Finally, I'd like to thank my husband Alan, who kept the world turning while I couldn't do it. You have been the Sam to my Frodo. Thanks for carrying me in the end and putting up with my Golumn-like ways. All my love to you and all my thanks to the rest.

Change in Foster Care: The Impact of Relationships and Environments on Foster Child Functioning

Publication No. _____

Kelly Jane Stepura, Ph.D.

The University of Texas at Austin, 2010

Supervisor: A.J. Schwab

The child welfare system has a responsibility to provide healthy environments for children who are removed from the care of their biological families. An important indicator of success in this endeavor is variations in child functioning following admission into foster care. Maltreated children are already at risk for difficulty adjusting to new environments and creating new relationships. This dissertation sought to explore the effect of change during foster care on child functioning. The effects of various types of change on children who were provided with treatment foster care services were evaluated using the Child and Adolescent Functional Assessment Scale (CAFAS[®]) as a measure of child functioning. Results indicated that placement change and foster sibling presence negatively impacted child functioning, but that caseworker contact, foster sibling removal, and caseworker change positively impacted child functioning. Policy and practice implications emphasize the positive impact of single-child foster care placements, reduced volatility within foster child environments and relationships, and increased caseworker contacts. Future research should examine factors that mediate the

relationship between systemic volatility within the foster care system and child functioning.

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Chapter 1: Introduction

OVERVIEW

The negative effects of placement change on foster child outcomes have been well-documented, but placements are but one of a myriad of changes that can disrupt the lives of foster children. Foster care system involvement introduces numerous potential sources of change throughout all aspects of a child's life, including neighborhoods, friends, homes, schools, teachers, therapists, caseworkers, caregivers, and siblings. Few studies have explored the importance of changes in these areas or of the cumulative effects of multiple types of changes. Additionally, though existing research has focused on the damaging effects of placement change in relation to emotional and behavioral outcomes for fostered children, little research has focused specifically on child functioning. Further, most previous research has neglected to disentangle the relationship between predictors of change and outcomes of change by controlling for measures at entry into care.

This exploratory research study aims to fill those gaps by applying attachment and systems theories to a longitudinal dataset of foster children to examine the effect of changes in environments and relationships on foster child functioning, measured using the Child and Adolescent Functional Assessment Scale (CAFAS[®]). The study focuses on the effects of system involvement on foster children who have received Treatment Foster Care services. This population was chosen because it consists mainly of adolescents experiencing high levels of emotional and behavioral disturbance and thus is particularly

well-suited to assessment of child functioning using the CAFAS. The dissertation provides a detailed explanation of the theories underlying the study and also contains a methodological review of research on the effects of child welfare system involvement on foster children.

The conceptual framework for the study presented in Chapter 2 uses General Systems Theory, Family Systems Theory, and Attachment Theory to provide a lens through which the effects of change on child functioning can be explored. Using General Systems Theory, the macro level refers to the foster care system itself and the policies that guide the system. While some policies reflect efforts to minimize change for foster children, other policies require change when it is thought to be in the best interests of the child. This dissertation seeks to explore the effects of change on foster children regardless of whether the change reflects intentions to improve the child's circumstances while in care.

These policies are only implicitly associated with foster child functioning. In fact, their direct effect occurs through representatives of the foster care system. Foster care system policies establish the parameters of all relevant relationships. Relationships between the foster child, biological family members, and agents of the foster care system are inherent to the mezzo level of General Systems Theory. Family Systems Theory is used to explore the mezzo level, providing a method for understanding relationships that influence foster children and may directly affect their level of functional impairment.

Changes in these relationships may represent challenges to foster child attachment. The conceptual framework for this study uses Attachment Theory at the micro level of General Systems Theory to illuminate not only the issues that children bring with them into care, but also the issues that are exacerbated or created by the foster care system. For foster children, attachment issues may begin with abuse or neglect at

the hands of their biological parents. Their ability to attach may be further inhibited during their initial involvement with the foster care system, when they are removed from their biological family. These events alone may result in serious challenges to attachment. During care, the volatile nature of the foster care system necessitates changes in relationships with people to whom the child might attach, potentially exacerbating existing attachment issues. Based on Attachment Theory, problems with attachment affect a child's ability to cope with stress, maintain mental health, and develop a sense of mastery. Hypotheses for this dissertation are derived from this theoretical base to focus on the negative affects of changes in relationships during foster care on foster child functioning.

The literature review focuses on changes in environments and relationships that are introduced by the foster care system that may put children at risk for a reduced capacity to function. These include placement changes, caseworker changes, and foster sibling changes. Further, factors that may protect the child from the harmful effects of these changes are also addressed. These include the maintenance of relationships with biological siblings, biological parents, and caseworkers via ongoing contact with these individuals.

Unfortunately, though these factors are all theoretically relevant to the current discussion, not all of them were available for analysis. Thus, the specific aims of this study were to evaluate the effects of three types of system-imposed relationship changes (placement change, caseworker change, and foster sibling change) and the child-caseworker relationship on foster child functioning. It was hypothesized that a negative association between severed relationships (e.g., placement change, caseworker change, and foster sibling change) and child functioning would be found, but that continuity in relationships (e.g., caseworker contact) would positively impact foster child functioning.

Analyses examined these direct relationships and their relative importance, but also explored their cumulative effect on functioning.

Understanding the effects of these factors on foster children is critical for policymakers who support policies that promote stable, safe homes for foster children, psychological stability, and healthier development and functioning. Results from this study may suggest that current definitions of stability should be re-defined, and that policies and mandates related to acceptable levels of change should be expanded to include other types of change. This research can also provide the field with a better understanding of the implications of related policies and their impact on foster child functioning.

PROBLEMS AND OBJECTIVES

When children enter foster care, many new individuals and environments are introduced into their lives and many are altered, if not completely eliminated. In effect, foster children become part of and must adjust to a large governmental system. Children often remain a part of this system for long periods of time or permanently, increasing the amount of influence the foster care system has on their growth and development. In an effort to reduce time spent in care, the Adoption and Safe Families Act of 1997 (ASFA, Public Law 105-89) instituted reduced time frames for reunification efforts and deadlines for initiating the termination of parental rights. However, following this initiative a large percentage of children remain in long-term foster care placements. Current statistics point to the fact that there were approximately 463,000 children in foster care and 285,000 who exited the foster care system in 2008. Children who exited care were in care for an average of 27.2 months and approximately 24% had been in care for three or more years (USDHHS, 2009d). With so many children experiencing long stays in foster

care, focus on stable, healthy environments for foster children became imperative (Newton, Litrownik, & Landsverk, 2000; Wulczyn, Kogan, & Harden, 2003).

Generally, experts in the field reasonably conclude that change is especially challenging for foster children and impacts them negatively. The majority of foster children enter care with maltreatment-related problems such as attachment disorders, poor mental and physical health, compromised brain functioning, and inadequate social skills (Harden, 2004; Ownbey, Jones, Judkins, Everidge, & Timber, 2001; Glaser, 2000; Halfon, Mendonca, & Berkowitz, 1995; Wells & D'Angelo, 1994; Kates, Johnson, Rader, & Strieder, 1991; Rosenfeld, Pilowsky, Fine, & Thorpe, 1997), which make it especially difficult for them to adjust to new environments. These children tend to have difficulty bonding with new people and getting along with others (Erickson & Egeland, 1996; Mueller & Silverman, 1989; Rogosch, Cicchetti, & Aber, 1995), perhaps due to a limited ability to read the emotional states of others, and express their own emotions (Schore, 2003a, 2003b).

Most foster children experience removal from their original home environment, which is often quite traumatic in itself (Schneider & Phares, 2005; Drapeau, Simard, Beaudry, & Charbonneau, 2000; Lanyado, 2003). However, the foster care system may exacerbate a foster child's maltreatment-related psychosocial issues as well as the trauma of the initial removal by introducing multiple environmental and relationship changes throughout a child's time in care. Changes are thought to be emotionally burdensome and disruptive for children and can heavily impact an already psychologically fragile child with additional issues such as loss and grief, separation, and feelings of rejection. Lack of environmental consistency alone can create stress, confusion, and feelings of insecurity for a child (Perry & Pollard, 1998; Festinger, 1983), and has been directly

associated with emotional and behavioral problems (see McAuley, 1996; Newton et al., 2000 for examples).

Studies exploring the reasons for these changes have focused mainly on the attributes of children, their behavior, and their situations as a way to explain the number of placement changes that children experience (Wulczyn & Kogan, 2003; Proch & Taber, 1985, 1987; Pardeck, 1984a; Cooper, Peterson, & Meier, 1987; Newton et al., 2000; Barber & Delfabbro, 2003b; James, Landsverk & Slymen, 2004). However, recent research points to systemic factors, such as procedures, policies, and mandates as a more prevalent reason for placement change. Examples of these include mismatches between the child and the foster family, efforts to reunite foster children with siblings or other relatives, efforts to move children to less restrictive environments, and unrealistic expectations of foster families (James, 2004; Barber & Delfabbro, 2003b; Proch & Taber, 1985; Staff & Fein, 1995). In fact, studies have found that systemic factors are more typical reasons for change, accounting for approximately 67-80% of placement changes (James, 2004; Barber & Delfabbro, 2003b).

Thus, despite academic focus on the child behavior as the reason for placement change, recent research has pointed to systemic factors that may be even more influential. This dissertation seeks to focus on the consequences of other system-imposed changes, such as caseworker change and foster sibling change, in conjunction with placement change, on child functioning. It is with this in mind that the next section focuses on the historical relevance of stability in foster child environments and relationships as this concept has matured through the legislative process.

LEGISLATIVE FOCUS ON FOSTER CHILD STABILITY

Discussion of stability in foster care began long before related mandates were established (e.g., Cowan & Stout, 1939; Maas & Engler, 1959). Despite earlier

acknowledgement of stability as an important factor in a child's life, political and academic attention began more recently (Usher, Randolph, & Gogan, 1999; James, Landsverk, Slymen, & Leslie, 2004). Though foster care was intended as a short-term, temporary solution, beginning in the 1960s, it became a long-term situation for many children. To make matters worse, child protection agencies have had difficulty producing information such as the number of foster children in their care and their locations (Costin, Karger, & Stoesz, 1996). The Adoption Assistance and Child Welfare Act of 1980 addressed these and other problems in the child welfare system, with a focus on the haphazard supervision of children placed in foster care. The Act required agencies to develop permanency plans and to move quickly toward permanent homes for foster children. The emphasis of this act was on prevention of removal, reunification, and the avoidance of long-term foster care through permanency planning (NCCAN, 2003).

This marked the beginning of the family preservation movement, which sought to lower costs and protect families from unnecessary disruption by providing services to protect children while they remained in their homes, or if removal was necessary, to reunify families as soon as possible. Child protection agencies were required to make "reasonable efforts" to keep families together, encouraging the original family unit as the best option for permanency (Costin et al., 1996).

While family preservation continues to hold great promise for child welfare, some disturbing consequences of its implementation led to a need for refinement of related policies. A few high profile child fatalities were attributed to misinterpretation of the federal law requiring reasonable efforts to keep families together. Additionally, child protection agencies focused too heavily on the family preservation model, mistakenly reuniting children with abusive or neglectful parents. As a long-term consequence of these strategies, the number of children in foster care increased along with the length of

time these children spent in the system, while the number of children who were adopted declined. Due to the emphasis on family preservation, many children were either inappropriately returned to their parents or trapped in the foster care system, awaiting reunification while moving from placement to placement and eventually aging out of the system as young adults (Costin et al., 1996).

The Adoption and Safe Families Act of 1997 attempted to correct these problems and to promote safety, permanency, and well-being for foster children. This Act promotes permanency for children in foster care, ensures safety to abused and neglected children, seeks to accelerate permanent placements for children, and increases the accountability of the child welfare system (NCCAN, 2003). The Act also mandated Child and Family Service Reviews (CFSR), which are designed to ensure that child welfare agencies conform to Federal child welfare requirements. Additionally, these reviews help to track children and families involved with child welfare services and to enhance positive outcomes (USDHHS, 2009a).

Among the CFSR indicators determining state conformity for permanency outcomes is stability of foster care placements. The measure states that 95% of foster children should have no more than two placement settings. It excludes temporary living conditions and views children at a point in time. Because of this, it does not capture all movement that a child experiences while in foster care. It also does not assess the number of placements for a full 12-month period, so that actual time in care may range from one day to 12 months as of the reporting date (USDHHS, 2007).

In 2008, only 9 of 32 states were in compliance with placement stability standards. In fact, for children in care at least two years, 67% had three or more placements and 60% of States have declined in performance on this measure from 2002 to 2005 (USDHHS, 2009b; USDHHS, 2009c). These figures have not improved since

the inception of the CFSR and potential causes for the lack of compliance include the frequent use of shelter facilities as initial placements, insufficient supply of appropriate placement options, lack of foster family services to prevent disruption, and inadequate matching of foster families with children (USDHHS, 2004).

Thus, family preservation and permanency movements have greatly influenced federal regulations regarding the care of foster children. Stability was originally conceived of in terms of speed to permanence, and only later in terms of stability while in foster care. Placement change has gained focus in recent years, due in part to backlash from these movements. In fact, the importance of placement stability was further recognized through the recently enacted Fostering Connections to Success and Increasing Adoptions Act (PL 110-351). The Act promotes permanency for children and prevention of educational and medical discontinuity. Further, the act focuses on increasing adoptive families, ensuring placements with relatives, and maintaining sibling ties.

Despite national standards related to the well-being, safety, and stability of foster children, most States are currently not in compliance despite mandates to improve these outcomes. This research could help to further define and expand governmental responsibility to children in care. It could provide input to federal mandates to expand the definition of stability to include other types of change. Additionally, it could compel further acknowledgement of the importance of maintaining relationships to the extent that they are healthy for a child.

CHILD WELFARE SYSTEM INVOLVEMENT

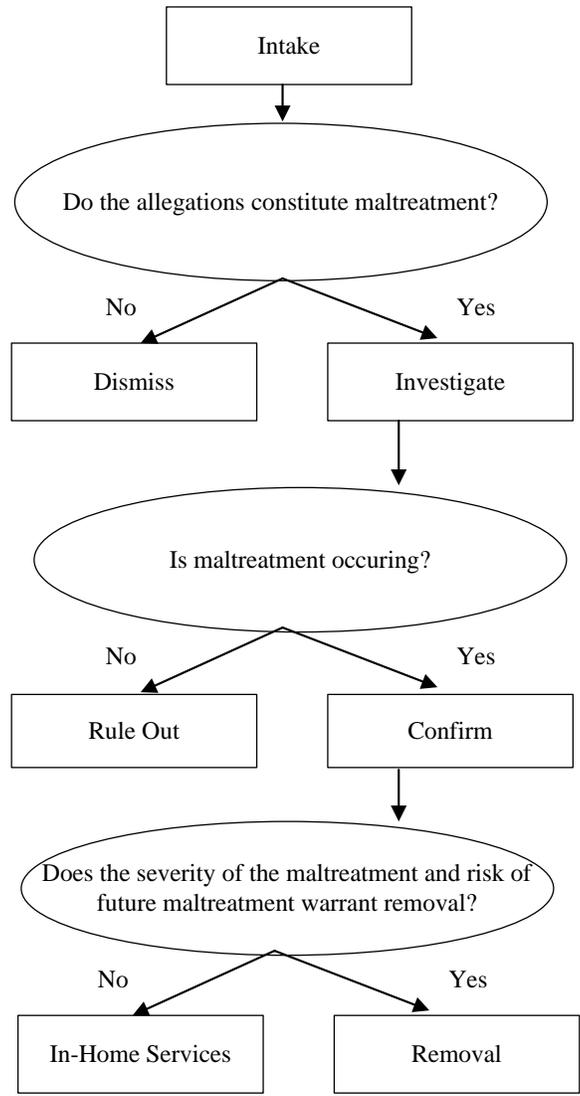
An examination of the child welfare system will help to illuminate the experience of foster children as they move through the system and the effect of child welfare policies on their lives. Most often, a foster child's involvement with the child welfare system is initiated by a report to Child Protective Services (CPS). Though many reports of child

maltreatment are made each year, only 20% of substantiated cases are severe enough to warrant removal (USDHHS, 2010a). For children who are removed, their involvement in the child welfare system is influenced by a series of decisions made by caseworkers on their behalf. Among these is the decision as to what type of substitute care should be provided to the children, based on their needs and the level of care they require.

Child Protective Services

The CPS system operates based on a series of decisions that are made by caseworkers in the child's best interests. Though the details of the process vary from state to state, children and families are funneled through a system of services based on decision points in a decision making continuum (see Figure 1.1; TDFPS, 2010b). The Texas CPS system will be used here to illustrate the process.

Figure 1.1. Texas Child Protective Services Process



In the first step in the process, cases are referred to CPS by professionals and non-professionals in the community, and CPS is responsible for making a decision about whether or not to investigate the situation, based on whether the allegations constitute State and Federal definitions of maltreatment. If the allegations meet those standards, a CPS investigation worker is assigned to the case and investigates to determine whether the maltreatment occurred, the severity of the maltreatment if it did occur, and the

potential risk to the child of a recurrence. Based on this information, the case is either ruled out and generally the family does not receive services, or the family may receive family preservation (in-home) or substitute care services, based on a recommendation to the court for removal of the child from the home (TDFPS, 2010b).

For cases that necessitate substitute care services, children are removed from their home and CPS assigns the child to a foster care agency, which is generally responsible for providing a facility for the child and monitoring the facility and the child's care. The state CPS agency is responsible for monitoring the foster care agency. Though the process varies from state to state, generally children are assessed in terms of their needs and the level of care that must be provided to them. As soon as possible, children are assigned a permanency goal of either reunification, kinship care, adoption, or long-term foster care. Often, these goals change due to availability of adoptive homes and parental compliance with CPS mandates. Children are moved into a foster home, a residential treatment facility, or a group home, or an emergency shelter if no other placements are available immediately (USDHHS, 2010b; Harris, 2004).

Treatment Foster Care

For children placed in foster care, there are different types of care available, based on the child's needs. Special attention is given to Treatment Foster Care (TFC), as foster children receiving these types of services are the focus of this study. TFC is also referred to as specialized foster care, intensive foster care, therapeutic foster care, multidimensional treatment foster care, therapeutic families, parent-therapist program, and foster family-based treatment (Dore & Mullin, 2006; FFTA, 2006; Redding, Fried, & Britner, 2000). There are an estimated 70,000 children receiving TFC services at any given time (Castrrianno, 2007). TFC is based on the premise that foster parents can be trained to provide therapy in their daily interactions with foster children (Gabor &

Kammerer, 1983; Jivangee, 1999). TFC homes are able to provide therapeutic care to children who have a greater need than those who require only standard foster care, because of the training and availability of the foster parents. TFC is utilized as a less restrictive and more cost-effective alternative to residential care (Dore & Mullin, 2006; Bryan, 2004; Rosenfeld et al., 1997). For children with special behavioral, mental, and/or physical health needs, the family setting provided by TFC can be more beneficial for foster children who might otherwise have been placed in a residential setting. In fact, TFC combines features of both residential treatment and standard foster care (Meadowcroft, 1989, Webb 1988).

TFC originally developed as an outgrowth of research suggesting that a child's psychological needs may be best met by living in a family environment (Meadowcroft, 1989; Webb, 1988; Redding, Fried, & Britner, 2000). As residential care became less acceptable, legislation supporting the least restrictive environments possible for children was established (U.S. Gov. Printing Office, 1997). TFC was seen as a solution for children who had greater needs than could be met by standard foster care, but whose needs were no longer serious enough for residential care (FFTA, 2006). As the TFC model became more established and standardized, more and more children who would previously have been placed in residential care are able to live in home settings (FFTA, 2006). TFC is considered more suitable than residential care for this group of children because it not only uses the appropriate treatment modalities for these children's issues, but also allows the children to experience family life and take part in community activities more regularly and easily than children in residential care. This minimizes the challenges associated with being reintegrated into the community later (Clark et al., 1994).

The basic features of TFC include professionally trained foster parents who often do not work outside the home, a small number of foster children in the home, and high levels of caseworker support, including crisis intervention, education, and service coordination, with low caseworker caseloads (generally 10 to 15 children; Meadowcroft, 1989; Nutter, Hudson, & Galaway, 1989; Staff & Fein, 1995). Clinically, TFC homes provide a safe and therapeutic environment through effective parenting, relationship therapy, continuity with loved ones, therapy for special needs, and a plan for permanency (Fine, 1993).

Though TFC programs vary, other common features include:

- Families in the community are recruited, trained, and supported to become TFC families
- Treatment team membership for TFC families
- Higher reimbursements for services
- Extended training, supervision, and support for TFC parents
- TFC caseworkers are on call 24 hours per day
- Psychotherapy and other services are provided to the child
- Planned treatment emphasizes daily interactions between the child and the foster family
- A family therapy component with the biological parent(s) and/or aftercare resources to support families after reunification is provided.

(FFTA, 2006; FFTA, 2004; Berrick, Courtney, & Barth, 1993; Hudson & Galaway, 1989; Meadowcroft & Trout, 1990; Nutter et al., 1990; Terpstra, 1990; Webb, 1998).

TFC is generally thought to be more effective than other substitute care options. In a review of eleven evaluation studies (Hudson, Nutter, & Galaway, 1994) and another

of 40 outcome studies (Reddy & Pfeiffer, 1997), it was found that that TFC results in improved social skills and psychological adjustment and reduced behavior problems for foster children. TFC also contributes to higher rates of permanency, less restrictive post-discharge placements, and lower costs (Hudson, et al., 1994). Problems with TFC include the same problems faced by other substitute care programs: placements often fail (Berrick, Needell, Barth, & Jonson-Reid, 1998; Palmer, 1996; Staff & Fein, 1995; Stone & Stone, 1983; Rosenfeld et al., 1997), and foster parents often quit (Baker, 1989).

The decision as to which TFC family is best suited to provide care for a specific child is made at entry and any time a placement changes. Unfortunately, sophisticated matching techniques have yet to be established (Redding, Fried, & Britner, 2000), and the caseworker's choice of placements is often plagued by a dearth of available foster homes and other system-related issues.

Matching Foster Children with Appropriate Homes

The process of matching foster children with appropriate placements is a vital component of the child welfare system process because poor matches often result in placement change (Doelling & Johnson, 1990; Proch & Taber, 1985; Smith, 2004; Smith, Stormshak, Chamberlain, & Bridges, 2001; Perry, 2006). Unfortunately, studies evaluating matching processes or even exploring current matching procedures, especially within the foster care system, are almost completely unavailable (Redding, Fried, & Britner, 2000). Obtainable studies point to a disappointing lack of consideration and planning on the part of the matching agencies. One study examined matching practices among sexually abused and abusing children, a population in which matching practices would be seemingly indispensable. In less than one third of the placements, consideration in terms of how the young person would fit in with others in the setting was given. In fact, in about half of the cases, no information about the young person's history

of sexual abuse or abusing behavior was given to the caregivers (Farmer & Polluck, 1999). When caseworkers do consider appropriate matches, focus is generally related to demographic information and child management needs. Available tools that probe deeper to focus on the child's temperament and the home environment are needed (Valdez & McNamara, 1994).

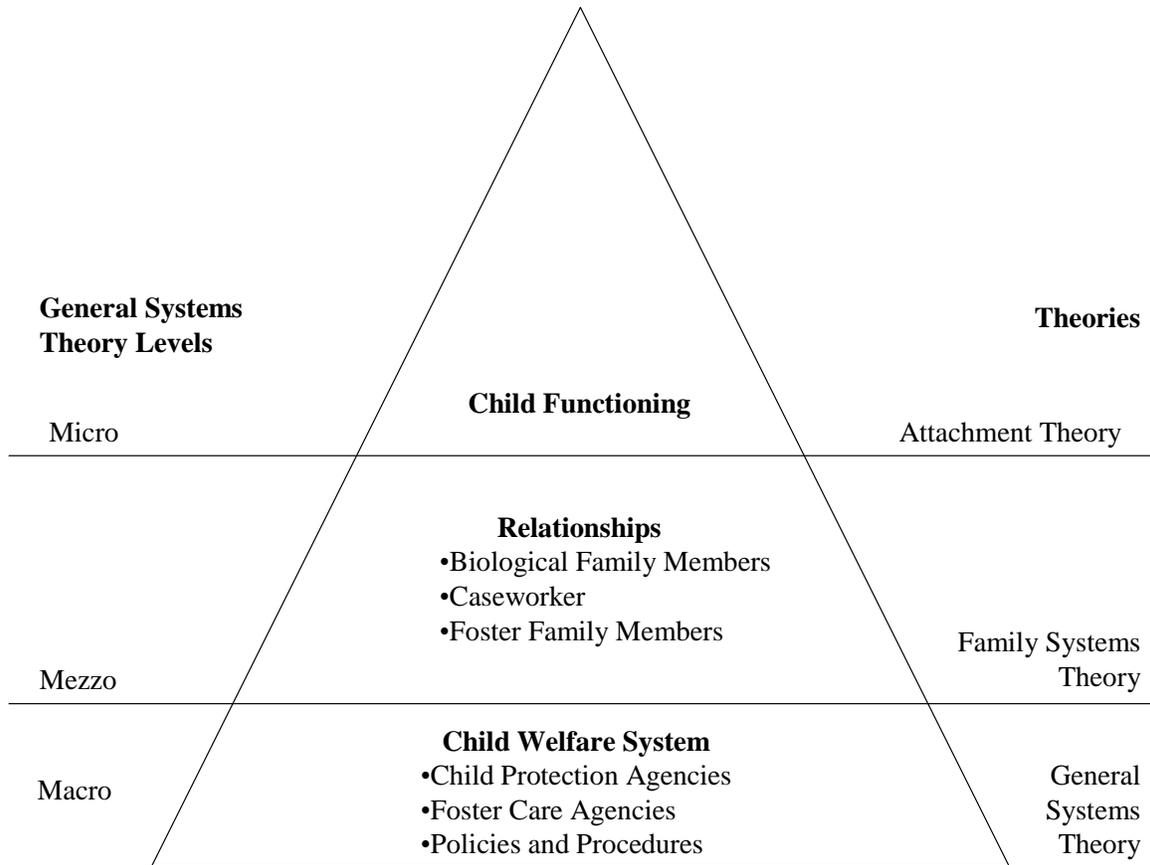
Barriers to effectiveness in matching may include limited caseworker time to make decisions (James, 2004), lack of foster parents and homes, and inadequate foster parent training and support (Redding, Fried, & Britner, 2000; Wells & D'Angelo, 1994; Bryant, 1981). Additionally, empowering foster children and foster families by involving them in the process and in decision-making is vitally important (Redding, Fried, & Britner, 2000; Ruff, Blank, & Barnett, 1990). Improvements in these areas can provide protection from placement change. For example, one study found that matching rigid foster mothers with children with negative moods was predictive of placement change (Doelling & Johnson, 1990). More information as to which children are best suited for which homes is critical to minimizing the amount of change foster children experience.

In summary, though legislative efforts have attempted to mandate higher levels of stability for foster children, the child welfare system introduces many changes into their lives. At each stage of the child protection process, caseworkers make decisions about the services that should be provided to children and their families, necessarily resulting in removal and further decisions related to placement in foster care for foster children. These decisions should be based on the best interests of the child in terms of safety, stability, and well-being, but in reality are often made without much guidance or alternative placement options. The conceptual framework for this study provides a context through which the effects of these issues on foster child functioning can be viewed.

Chapter 2: Conceptual Framework

The conceptual framework for this dissertation applies interlacing theories in an effort to thoroughly explore a child's experience of the child welfare system on multiple levels. As shown in Figure 2.1, General Systems Theory provides an overarching framework, while Attachment Theory is used to explore the individual child functioning at the micro-level, Family Systems Theory is used to describe relationships between biological and foster families, the caseworker, and the child at the mezzo level, and the child welfare system itself, including child protection and foster care agencies, along with the policies and procedures that they follow is germane to the macro level. The following discussion outlines each of the theories and its relevance to the current research.

Figure 2.1. Theories for Examining the Foster Child Experience



ATTACHMENT THEORY

At the micro level, Bowlby’s Attachment Theory provides a framework for understanding the effects of change on a child’s capacity for healthy development and functioning. The proposed conceptual model incorporates Attachment Theory by acknowledging the effects of attachment issues on child outcomes. The foster care system’s main influence is the placement itself, through which there is an opportunity to provide some level of continuity between the child’s life before and during placement. It is proposed that this continuity may heavily influence attachment with a foster family

which can, in turn, affect stability and child functioning, shaping the child's overall psychosocial development and well-being.

Attachments affect the ways children regulate emotional distress, cope with stressful events, and maintain an adequate level of mental health. Secure attachments promote a sense of security, reduce anxiety, and help in coping with stressful events. Caregivers serve as a secure base from which to explore the social and physical world (Ainsworth, 1963, 1973; Bowlby 1973). As parent-child attachment grows, children develop a sense of security through the consistency and predictability of the attachment that allows them to explore their surroundings and develop a sense of mastery over their environment (Bowlby, 1973, 1980, 1984). According to attachment theory, children build mental representations of their own worthiness from experiences and perceptions of caregiver's availability, ability, and willingness to provide care and protection (Bowlby, 1973). Recent neuroscience research has supported Bowlby's theoretical arguments (Schor, 2003a, 2003b), explaining that from a biological perspective, attachment involves the right brain's regulation of the biological synchronicity between a parent and a child (Schor, 2000, 2001).

Historically, the child welfare field has used attachment theory as a lens for viewing the psychosocial issues and negative behaviors often associated with foster children (Arrendondo & Edwards, 2000; Haight, Kagle, & Black, 2003). Children are assumed to enter the foster care system with attachment problems that originated with maltreatment in their biological families (Bowlby, 1980; Bowlby, 1988; Goldberg, Muir, & Kerr, 1995; Cicchetti & Carlson, 1989; Carlson, Cicchetti, Barnett, & Braunwald, 1989; Holmes, 1999; Howe, Brandon, Hinings, & Schofield, 1999; Crittenden & Ainsworth, 1989; Cicchetti & Toth, 1995; Styron & Janoff-Bulman, 1997; Bentovim, 1988). While issues that children bring to placement should not be overlooked, the foster

care system itself may also be affecting children's ability to develop into healthy and self-sufficient adults. Upon removal, the child not only joins a new family and living environment, but also enters a large governmental system that is mandated to protect children. As such, the foster care system can be thought of as a third party that plays a role in the attachment relationship between a child and their biological parents as well as their foster parents. Additionally, experiences while in care can further affect foster child attachment issues. For example, foster children have reported placement changes as not only a series of significant losses, but as events that left emotional scars and hindered their ability to trust people and to build and maintain relationships (Unrau, Seita & Putney, 2008).

Attachment disorders can lead to impairments in the processing of socio-emotional information. Thus, children with attachment disorders may have a limited capacity to modulate the intensity and duration of affects. Individuals with poor attachment histories often display empathy disorders, which are characterized by a limited capacity to perceive the emotional states of others. This results in misattribution of emotional states and misinterpretation of the intentions of others (Schore, 2003a, 2003b).

Researchers have also linked attachment issues to social and emotional problems. Children with secure attachments are likely become more socially and emotionally competent children and adults, and tend to be more autonomous, better able to regulate negative affect, less likely to have behavior problems, and more likely to form close, stable peer relationships (Rothbaum, Weisz, & Pott, 2000; Cassidy & Shaver, 1999; Lewis, Feiring, McGuffog, & Jaskir, 1984; Schneider-Rosen & Cicchetti, 1984; Egeland & Erickson, 1987; Bowlby, 1988; Crittenden, 1988). Securely attached children are also more likely to persist in problem solving, have fewer psychological problems, higher

self-esteem, self-efficacy and ego resilience, and engage in more versatile and positive exploration (Grossman, Grossman, & Zimmermann, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). Attachment issues affect the child's way of responding in the world and may effectively deprive the child of a positive internal model of self (Schneider-Rosen & Cicchetti, 1984; Egeland & Erickson, 1987; Bowlby, 1988; Crittenden, 1988). Attachment influences a child's relationships, behaviors, and coping skills (Solomon & George, 1999).

Behavioral issues may also be associated with attachment disorder. Since foster children with attachment disorders would not have learned to effectively regulate their own emotions and impulses, they may focus on regulating and controlling their outer world. For these children, control may be equivalent to survival. Thus, behavior that may be termed "defiant" by the foster care system may also be empowering foster children (Levy & Orlans, 1998). This, compounded by difficulties bonding with new people and getting along with others (Schoore, 2003a, 2003b), could make it especially difficult for maltreated children to adjust to new environments.

Involvement in the foster care system also affects a child's ability to develop a sense of mastery by placing them in a new and constantly changing environment with little consistency and predictability. Foster children are immersed in a situation full of challenges, creating uncertainty, fear, and anxiety, and inhibiting their capacity for healthy development. The child's sense of mastery is diminished because existing coping skills may not fit new neighborhoods, schools, activities, and homes. This is exacerbated by lack of continuity in relationships with biological parents and siblings, as well as other people with whom the child is familiar, such as caseworkers and foster family members.

The consequences of these changes may be further aggravated by multiple placements, creating a situation in which it may be healthier from the child's perspective

to avoid attaching to surrogate parents. Thus, a child may be highly dysfunctional from the perspective of the foster care system, but may be protecting themselves from the system's effects on their sense of mastery in a very healthy way. Foster children, especially those with multiple placements, may learn to avoid attachment in order to cope with instability. These children may be seen by the system as "difficult" or "problem" children, though they may actually be acting in ways that allow them to develop a healthy sense of mastery. In fact, one study found that attachment avoidance may reduce grief associated with loss (Mancini, Robinaugh, Shear, & Bonanno, 2009).

FAMILY SYSTEMS THEORY

Given the agency's authority over the entities intrinsic to the foster care system and the influence of the relationships between these entities, the child's experiences of these relationships should also be examined. Given the potential affect of the foster care system on the child's ability to develop healthy attachments at the micro level, the influence of the relationships between entities intrinsic to the foster care system should be examined. Within the overall General Systems Theory model, the relationships between subsystems are found at the mezzo level. Family Systems Theory provides a systemic model of foster care that depicts the interdependent network of relationships established between child, biological family, foster family, and caseworker against the backdrop of macro-level agency policies and procedures.

The structure of relationships within the foster care system can be viewed as a complex, integrated system characterized by organized patterns of reciprocal, interdependent interaction among individuals (Cox & Paley, 1997). Individuals are influenced by these relationships, and their behavior cannot be fully understood in isolation from this context. Conversely, the behavior of individuals has repercussions for other system members and the overall maintenance of the system (Minuchin, 1985).

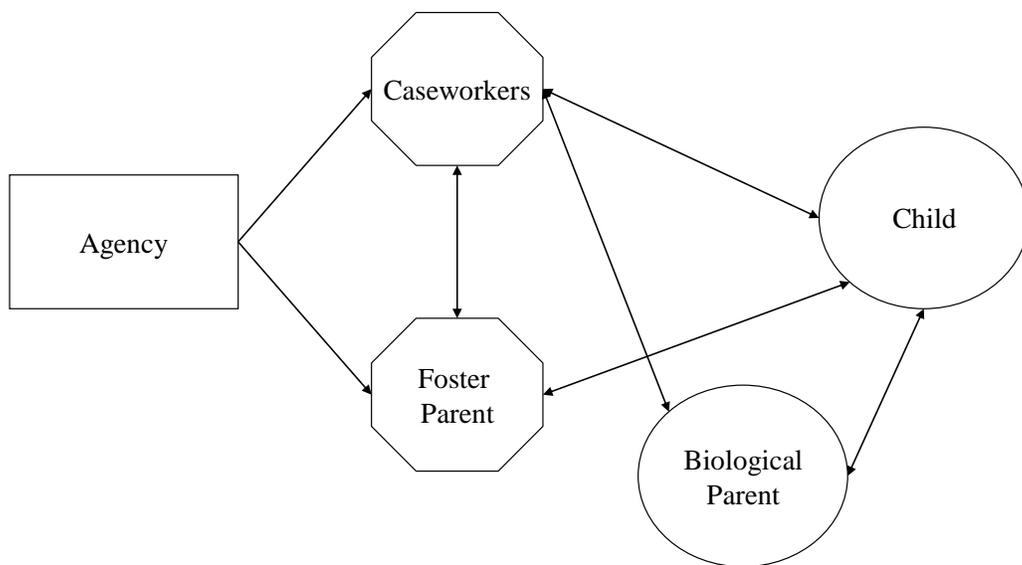
Furthermore, the systems perspective implies not just mutual interdependence among members, but also interdependence among relationships such that the quality of one relationship influences other relationships (Gjerde, 1986). The basic concepts of systems theory provide a framework for analyzing how systems are organized and for describing typical modes of interaction within and across the involved parties. Important properties of systems reflect both their coherence and their continuity (Cox & Paley, 1997). These include:

- Wholeness and order: the whole reflects a structure and function over and above a simple aggregation of its parts because the elements in a system are necessarily interconnected and interdependent
- Hierarchical structure: complex systems are composed of subsystems, and each individual may be a member of several subsystems; interactions occur within and across different levels that are differentiated by boundaries
- Adaptive self-stabilization: systems must have pattern and structure to survive, and patterns in systems tend to be circular; systems have homeostatic tendencies that compensate for changing conditions
- Adaptive self-organization: evolution and change are inherent in systems and challenges to existing patterns can result in reorganization.

Based on these principles, child functioning can be understood in the context of a larger, more complex set of relationships that involve the biological family, the foster family, and the caseworker. The elaborate network of relationships created by the foster care system is presented in Figure 2.2. As depicted, all connections between subsystems flow from the agency. The impact of agency mandates and policies is far-reaching and influences all of the other system members. Interactions between the individuals occur

within the context of the agency, which establishes the parameters for their involvement with each other.

Figure 2.2. System of Relationships in the Foster Care System



As the focus of the intervention, the child is located at the end of the model since the objective of all the subsystems is presumably to care for the child. The caseworker is at the top of the figure, retaining responsibility for decisions that are in the best interests of the child, as well as maintaining the child's relationship with their biological family whenever possible and establishing and maintaining the foster family-child relationship. The biological and foster families are both important figures in the child's life with an important role in the child's well being and potential stability. Seen in this way, the power differential between the levels is evident. Those most closely associated with the

agency (foster parents and caseworkers) have more power in the relationship, including the prerogative to end the relationship if they so choose, while children and biological families have far less power in the relationship and few legal means at their disposal to end agency involvement with their family.

The systemic model depicted in Figure 2.2 also focuses attention on the numerous possibilities for interaction among the individuals involved in the foster care system. Although the model can be used to analyze discrete interactions initiated by a particular individual, the foster care system exists across time, implying the ongoing series of reciprocal exchanges involved in the development and maintenance of relationships. Relationships are considered essential for individual behavior and development (Hartup & Laursen, 1999; Reis, Collins, & Berscheid, 2000). Therefore, individuals influence one another not just through particular interactions, but also through the overall nature and quality of their relationship.

Members of the system may have interactions with other members, and each of these relationships may be viewed as a subsystem with its own patterns and distinct boundaries. These relationship subsystems exert interdependent influence over the other members. For example, a particular relationship may be affected when one of the members carries over experiences from participation in another relationship (Lavigne, Tremblay, & Saucier, 1995; Sroufe & Fleeson, 1986). Alternatively, relationships between members may be altered by the presence of a third member (Deal, Haga, Bass, Hetherington, & Clingempeel, 1999; Gjerde, 1986). The overall foster care system encompasses all subsystems composed of various combinations of child, biological family, foster family, and caseworker. A fundamental proposition is that child outcomes will depend on the pattern and content of interactions that occur within and across the relationship subsystems represented by the model. By suggesting the potential for

complexity within these relationships, the systemic model provides a framework for investigating the multiple ways in which each member may contribute to child functioning.

The proposed model also highlights the importance of channels of communication in the foster care system. Conceptually, each subsystem will be stronger when individuals adhere to principles of direct, cooperative, and coherent communication (Grice, 1989). Similarly, the overall system is likely to be more adaptable and sustainable when information flows openly and efficiently through the pathways in the model. Nevertheless, the legitimate boundaries of subsystems should be respected and maintained, so that information can be exchanged between individuals without fear of inappropriate disclosure (Minuchin, 1974).

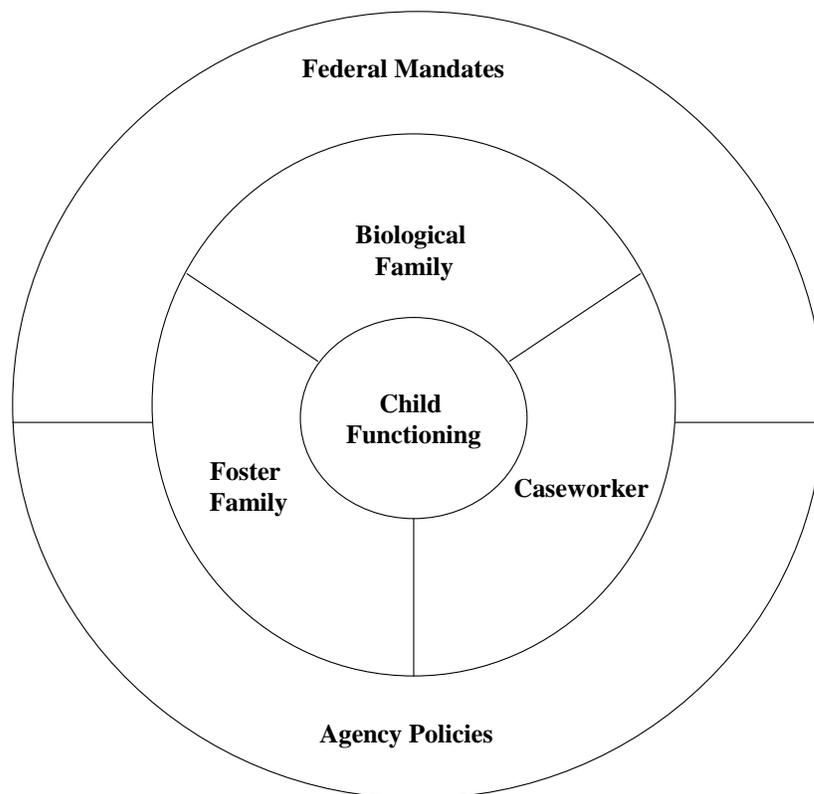
GENERAL SYSTEMS THEORY

At the macro level, General Systems Theory involves a set of components that are directly or indirectly related, though each component is related to at least some others (Anderson & Carter, 1990). Systems Theory holds that any system is comprised of a number of parts or subsystems. Understanding any part of the system requires knowledge of the whole as well as how the parts of the system interact, connect, and exercise reciprocal influence upon each other. Additionally, understanding any subsystem requires knowledge of how the subsystems fit into the larger system. Every system and subsystem has boundaries that distinguish it as unique and make its tasks and processes clear, manageable, and achievable.

General systems theory provides a range of concepts that can guide understanding of function, dysfunction, and inter-relationships in organizations, groups (Harrison, 1987) and families (Nichols & Schwartz, 1991). Central to systems theory is the concept of hierarchical and process-oriented structure, which defines the pattern of inter-

relationships among subsystems. The structure includes attitudes and perceptions as well as the ways in which decisions are made (Senge, Kleiner, Roberts, Ross, & Smith, 1999). Thus, structure has a major and reciprocal influence on individual behavior. The core theoretical approach of this work recognizes that all subsystems within the child welfare system, including the child, the biological and foster families, the caseworker, the child protective agencies and foster care agencies, are inter-related and interdependent (Figure 2.3).

Figure 2.3. Inter-relationships between Subsystems of the Foster Care System



To some extent, all the child welfare subsystems operate within the guidelines and constraints established through federal mandates and agency policies. Ideally, these encourage a shared understanding about the purpose of the program, the procedures for establishing and terminating placements, and the expectations about the roles and

responsibilities of each person involved. For foster care agencies, these protocols are manifested through the basic tasks of evaluating and assessing child needs, screening and training foster parents, matching children with families, and monitoring the children while in placement. Child, biological family, and foster family initial contacts with the agency may instill enduring impressions about the goals of the agency as they learn about agency processes, the expected frequency of contact between children and biological families, the expected length of stay in the foster home, and the permanency goals for the children. In short, General Systems Theory helps illuminate how federal mandates and agency policies provide a structure within which biological parents, children, foster parents, and caseworkers interact. The outcome of the foster care process for a child in terms of their functioning may rely on how well these promote the coordinated and cohesive functioning of the system of relationships.

SUMMARY

This conceptual framework provides a means by which the potential effects of changes in environments and relationships on foster child functioning can be better understood. At the macro level, General Systems Theory separates relevant issues into three distinct levels: micro, mezzo, and macro. The macro level contains the entities that are integral to the life of a foster child, including the agency, caseworkers, foster parents, and biological family, into an overall view of variables that effect child functioning. At the mezzo level, Family Systems Theory provides a framework for understanding relationships and environments that influence foster children. It is changes in these areas that are the focus of this research in relation to their effect on foster child functioning. At the micro level, Attachment Theory illustrates that children enter the foster care system with maltreatment-related issues that make adjustment to new situations especially

difficult, and that changes of any kind may exacerbate these issues, potentially resulting in functional impairment.

This study seeks to apply these conceptual notions in explaining the effects of change on foster child functioning. In theory, the foster care system places children who are already at high risk for attachment issues at further risk by continually eliminating relationships with people to whom they might attach. It is hypothesized that this results in functional impairment in foster children. The following literature review exposes factors associated with child functioning, provides further evidence of the negative effects of the foster care system on children, and supports the importance of this work in illuminating the effect of change on child functioning.

Chapter 3: Literature Review

Some studies have suggested that children involved in the foster care system show modest improvements while in care in the areas of psychological adjustment and behavior (Barber & Delfabbro, 2005; Barber & Delfabbro, 2003b). However, many studies report that when they enter care, maltreated children are already at risk for substantial problems during their youth and later as adults (Kessler et al., 2008; Stovall-McClough & Cloitre, 2006; Courtney et al., 2005; James, 2004; Ownbey et al., 2001; Wells & D'Angelo, 1994), and that a considerable percentage of children deteriorate further while in care (Barber & Delfabbro, 2003b; Newton et al., 2000). Given their maltreatment histories, the natural developmental changes that children experience while in care, and the multitude of system-related changes that befall foster children, it is difficult to identify distinct causes of this decline. Nevertheless, many researchers have focused on placement change as a potential cause for this deterioration (Newton et al., 2000; Evans, 1997; Rubin, Alessandrini, Feudtner, Mandell, Localio, & Hadley, 2004; Browne & Lynch, 1999; Fanshel, Finch, & Grundy, 1990; Dozier, Albus, & Fisher, 2002; Lanyado, 2003).

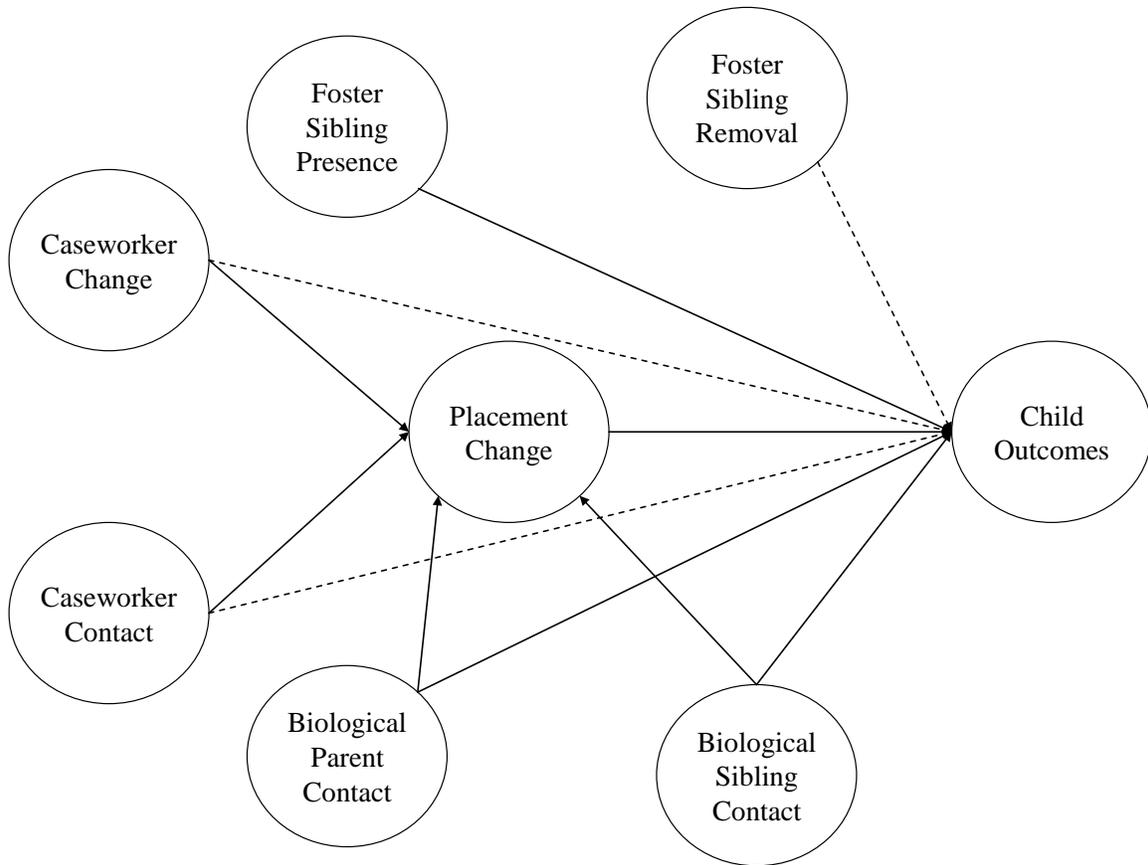
Very little research has been undertaken that explores the effects of other types of change besides placement change on foster child outcomes. However, some research has shown that other types of change are also important in relation to negative outcomes for children. For example, studies examining the effect of school changes in foster children have found an association between school change and low academic achievement as well as increases in behavioral problems (Allen & Vacca, 2010; Sullivan, Jones & Mathiesen, 2009). Additionally, some studies have pointed to the importance of stability in terms of consistency. In a recent study, child well-being was not associated with the number of

school activities in which the child was involved, but instead with the similarity between school activities prior to entry into care and activities while in care (Fong, Schwab & Armour, 2006). These studies highlight the need for a focus on stability in all areas of a child's life, beyond simply placement change. Furthermore, it is thought that changes in other areas of a child's life could in turn impact placement change (Fong et al., 2006). These other areas include changes in relationships with foster siblings (Moore, Osgood, & Larzelere, 1994), caseworkers (Eggertsen, 2008; Pardeck, 1984a; 1984b, 1985; Unrau & Wells, 2005; Baker, 1989; Stone & Stone, 1983; Pardeck, 1985; USDHHS, 2009b; Robinson, 1982), biological siblings (Leathers, 2006; Barth et al., 2007), and biological parents (Palmer, 1996; Moyers, Farmer, & Lipscombe, 2006; Edelstein, Burge, & Waterman, 2002; Haight et al., 2002; Rosenfeld et al., 1997).

MODEL OVERVIEW

The model displayed in Figure 3.1 depicts the relationships between factors associated with foster child outcomes based on previous research. Factors in the model may be positively, negatively, or ambiguously associated with child outcomes and their relationship may be direct or indirect. The relationships in the model illustrated using a dotted line are considered indirect because although the potential relationship between the factor and foster child outcomes has not been studied directly in previous research, other evidence exists to support the association. Note that all factors have been directly associated with foster child outcomes through previous research with the exception of caseworker change, caseworker contact, and foster sibling removal.

Figure 3.1: Relationships between Factors based on Previous Research



The model depicts an indirect relationship between caseworker change and negative child outcomes due to findings associating caseworker change with disjointed relationships with foster children (Balfour & Neff, 1993; Graef & Hill, 2000; Curry, McCarragher, & Dellmann-Jenkins, 2005) and the receipt of fewer services (Unrau & Wells, 2005). Similarly, though a direct relationship between foster sibling removal and child outcomes has not been established by previous studies, it is hypothesized that foster sibling removal may be relevant to negative foster child outcomes based on research that points to the importance of peer relationships (Berndt & Hoyle, 1985; Bukowski, Hoza, & Boivin, 1993). Like foster sibling removal, foster sibling presence has also been

associated with negative child outcomes. However, studies have established a direct relationship between foster sibling presence and negative child outcomes as depicted in the model, finding that greater the number of foster children present in the home resulted in higher levels of behavioral problems for children in the home (Linares, 2006; Moore et al., 1994).

Alternatively, caseworker contact is associated with positive child outcomes in the model. Though previous studies have not associated caseworker contact and child outcomes directly, a positive association between child outcomes and caseworker contact is expected. This relationship is hypothesized due to a study reporting that foster children who receive more services had fewer negative psychological and behavioral outcomes (Clark, Prange, Lee, Boyd, McDonald, & Stewart, 1994) and another study associating higher caseloads, and thus potentially less time for contact with foster children, with adult mental disorders (Kessler et al., 2008).

Factors related to contact with biological family members are ambiguous in terms of their relationship to child outcomes. Contact with biological parents and contact with biological siblings have been directly associated with both positive and negative child outcomes in previous research. Studies have suggested that contact with biological parents may increase child well-being (Cantos & Gries, 1997; Sanchirico & Jablonka, 2000) and reduce behavioral problems (Cantos, Gries, & Slis, 1997; McWey & Mullis, 2004; Leathers, 2002b). Studies finding evidence to support an association with negative child outcomes have reported that involvement with biological parents can distress foster children (Gean, Gilmore, & Dowler, 1985). Similarly, studies of biological sibling contact are ambiguous in relation to child outcomes. One study found that siblings can pose a threat to child functioning (Linares, 2006), while other studies have suggested that

siblings placed together have fewer emotional and behavioral problems (Hegar & Rosenthal, 2009; Tarren-Sweeney & Hazell, 2005; Groza et al., 2003; Smith, 1998).

The model depicts a direct association between placement change and child outcomes. Numerous studies have pointed to the negative effects of placement change on foster child behaviors and psychological well-being (see Barth et al., 2007; Ryan & Testa, 2005; James, 2004; Rubin et al., 2004; James, Landsverk, & Slymen, 2004; Barber & Delfabbro, 2003a; Dozier, 2002; Leathers, 2002b; Barber, Delfabbro, & Cooper, 2001; Newton et al., 2000 for examples). Since the relationship between placement change and negative child outcomes has been firmly established, the association between other factors in the model and placement change suggests a possible indirect association between that factor and child outcomes. Thus, the following factors are depicted in the model in terms of their relationship with placement change, providing further evidence of their potential effect on child outcomes as well.

For example, previous studies have associated increases in caseworker changes with increases in placement changes (Eggertsen, 2008; Pardeck, 1984a; 1984b, 1985). Alternatively, caseworker contact has been associated with a decreased likelihood of placement change. Findings suggest that greater frequency in contact between caseworkers and foster children may be associated with decreased rates of placement change (USDHHS, 2009b; Robinson, 1982). Furthermore, at least one study has associated greater frequency of biological parent contact with fewer placement changes for foster children (Barber & Delfabbro, 2003b). Additionally, though placement with biological siblings does not encompass all forms of biological sibling contact, placement with biological siblings has been associated with a decreased likelihood of placement change (Barth et al., 2007; Leathers, 2005) and thus a direct association between biological sibling contact and placement change is depicted in the model.

Although previous studies have rarely focused on how the foster care system affects child functioning, studies have often evaluated other foster child outcomes. The following literature review will expound on these relationships based on research conducted by previous studies. Research on factors depicted in the model that have been associated with foster child outcomes, including placement change, caseworker change, and foster sibling presence will be examined. Additionally, studies examining the importance of foster child relationships with their foster siblings, caseworkers, biological parents, and biological siblings will be discussed. For convenience, the figure depicting the model will be repeated for each factor.

PLACEMENT CHANGE

The relationship between placement change and child outcomes has been studied more than any other factor in the model. The following discussion of placement change reviews estimates of its prevalence and controversies in defining placement change. Additionally, evidence of the association between placement change and child outcomes is provided, including factors related to the foster care system, the foster parent, and the foster child.

Prevalence of placement change is difficult to establish because studies have examined varying populations and time frames, using different definitions of placement, placement change, and even foster care. Given these differences in sample and terminology, prevalence statistics for this population vary widely. However, studies attempting to establish prevalence have estimated that foster children average approximately five to eight placements while in care (Sullivan et al., 2009; Barber & Delfabbro, 2003b; Newton et al., 2000; McMillen & Tucker, 1999), with some children moving to new homes fifteen to twenty times during their stay in care (Newton et al., 2000). Almost 70 percent of foster care youth will experience four or more placements

while in the foster care system (ACF, 2009c; Pecora et al., 2005). A study of older adolescents released from care reported an average of 7.5 placements (McMillen & Tucker, 1999). However, prevalence statistics often underestimate placement change by excluding children who had not yet been discharged at the time of the study. Studies that do take current placements into account are narrow in terms of time frame and population. For example, in an eighteen-month study of San Diego foster children, an average of 4.23 placements were found (Newton et al., 2000). These figures do not take into account placement changes occurring after the eighteen-month time frame.

Regardless of the exact numbers, these statistics are daunting when viewed with the knowledge that the more placements they have, the less likely they are to ever maintain a stable placement (Perry, 2006; Connell, Vanderploeg, Flaspohler, Katz, Saunders, & Tebes, 2006; Proch & Taber, 1985; Pardeck, 1985; Pardeck, 1984b; Barber & Delfabbro, 2002; Minty, 1999). Studies have found that the greater the number of placements, the less likely a foster child will be able to establish a stable home, and subsequent placements tend to be shorter (Webster, Barth, & Needell, 2000; Barber & Delfabbro, 2002; Minty, 1999; Kagan & Reid, 1986).

Defining Placement Change

Research in this area is complicated by varying definitions that affect what is counted as a placement change. Debate exists over placement changes that result from policies intending to benefit children, such as transfers to relative placements, sibling placements, and less restrictive living environments. While transitions to these settings are generally thought to be positive and are promoted by policy, further investigation into the impact of these changes on foster children is warranted (Pecora et al., 2005). Further complicating this debate is whether temporary living conditions, such as short-term

placements, shelters, runaway incidents, respite care, and hospitalization should be counted.

Based on federal guidelines, a placement is defined as the physical location that a foster child considers their residence. It does not necessarily refer to the place where a child sleeps on a given night. As such, under certain circumstances a child's absence from a placement may represent a temporary living condition and not a new placement. These 24-hour care services are time-limited, specific in purpose, and not counted as placement settings for the purpose of the federal placement stability outcome measure (Woodruff, 2006; CWLA & NWGICWD, 2004; CWLA, 2002; USDHHS, 2009a). Some counts of placement change do not include temporary living conditions such as short stays in substitute care facilities or shelters and detention facilities (Staff & Fein, 1995; Newton et al., 2000). The exclusion of temporary living conditions may reflect efforts to consider that some types of placement changes may be either unavoidable (e.g., hospitalizations) or that short-term changes, such as week-end respite care, may be less detrimental to children. Other examples of these include trial home visits, runaway episodes, day or summer camps, and overnight visits with biological parents. Though temporary, these changes may distress a child as much as changes from a more long-term setting.

Emergency shelter placements are also often excluded from counts of placement changes. These may be important in placement matching by providing an opportunity for early assessment that can be used to make optimal foster family matches with children. However, there are mixed views on having a "grace" period for assessment with placements. While these placements may be beneficial in that they may be important for assessment and crisis intervention, they may still need to be taken into account in order to better understand the effect of any kind of change on foster children (Pecora et al., 2005).

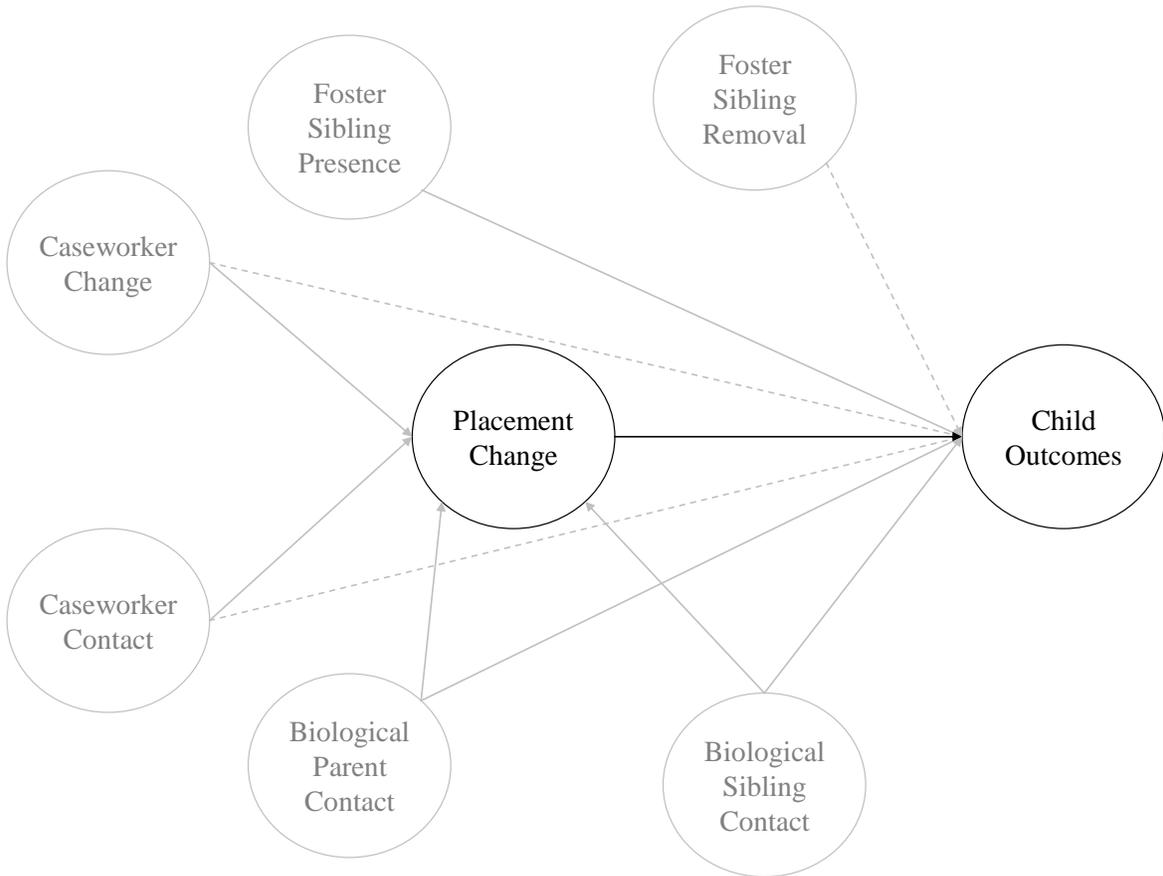
Given that the effects of temporary or seemingly beneficial placement changes are unclear, research taking into account the child's perspective should include all placement changes that may affect their well-being.

There are a few studies that conceptually differentiate types of placement change (Proch & Taber, 1985; Staff & Fein, 1995; James, 2004). These studies attempt to classify placement change as “good” or “bad” or “planned” or “unplanned”. A significant limitation of this area of research is that placements that are unplanned and considered beyond the agency's control, such as runaways and abductions, may not be included in counts of placement changes (James, 2004). Placement changes that are considered beneficial for the child, such as moves to emergency placements and sibling placements, are sometimes not counted either. Placement changes that result from improvements in the child's condition are also considered beneficial. For example, foster children are often placed in highly restrictive settings when less restrictive options cannot adequately address their mental health or behavioral problems. Restrictiveness refers to the degree that the setting constrains choices and limit freedoms of the youth. Based on legislative mandates, children must be placed in the least restrictive setting possible (NRCFCPP, 2005a), but these changes do not always result in improved outcomes for children.

While these distinctions may be useful to differentiate types of placements for categorization, ignoring these changes may overlook events that are distinctly important to the child and telling in terms of understanding foster child functioning. Research in this area has advanced in recent years, and factors that may contribute to placement change as well as child outcomes that may result from have been examined. Due to its relevance as a central factor in the model for this study (Figure 3.2), the following

discussion presents previous research on placement change from the perspective of the foster care system, the foster parent, and the foster child.

Figure 3.2: Relationships between Factors: Placement Change



The Foster Care System

Studies focusing on the foster care system have pointed to overcrowded foster homes as well as system policies that encourage changes which are considered to be in the best interests of the child. Federal and state child welfare policies include mandates intended to encourage what are considered positive changes, such as moving children to less restrictive settings, and others that are intended to minimize change, such as the use

of relative placements, and keeping sibling groups together (NRCFCPP, 2005a; Albert & King, 2008; Shlonsky, Bellamy, Elkins, & Ashare, 2005).

From a system perspective, placement change has been associated with a decreased likelihood of reunification (Fanshel & Shinn, 1978; Landsverk, Davis, Ganger, Newton, & Johnson, 1996) and more time in residential care (Teare, 1999; Well & Whittington, 1993). Studies focusing on placement type have found that children placed in emergency shelters are at high risk of placement change (Connell et al., 2006), while those in relative care have the lowest risk of placement change (Wulczyn & Chen, 2010 in press; James, 2004; Connell et al., 2006). Children in group homes and foster homes are respectively 2.5 and 3 times more likely to experience a placement change than those in relative care (Connell et al., 2006).

Studies also suggest a critical time period during which stability should be established (James, Landsverk, & Slymen, 2004; James, 2004; Barber & Delfabbro, 2003a; Barber & Delfabbro, 2002; Webster et al., 2000; Proch & Taber, 1985; Pardeck, 1985; Pardeck, 1984b). Findings suggest risk of placement change is highest during the first three to six month in care (Wulczyn & Chen, 2010 in press; James, 2004; Smith, Stormshak, Chamberlain, & Bridges Whaley, 2001), and that children who are unable to establish stable placements soon after removal are at greater risk for behavioral problems (Rubin, O'Reilly, Luan, & Localio, 2007) and for engaging in a continuing cycle of instability throughout the child's time in care (James, Landsverk, & Slymen, 2004; Webster et al., 2000). In fact, studies have found that children who established stable placements within forty-five days of entry experienced not only fewer placement changes, but also fewer stays in residential care settings, fewer runaway incidents, were more often placed with relatives, and had lower levels of behavioral problems than other foster children (Rubin, O'Reilly, Luan, & Localio, 2007; James, Landsverk, & Slymen,

2004). Alternatively, one recent study found that placement changes up to at least 8 months in care did not necessarily affect child psychosocial wellbeing in terms of conduct disorder, hyperactivity, and emotionality subscales of the Child Behavior Checklist (Barber & Delfabbro, 2003a).

Caseworker factors may also contribute to placement change. These factors include caseworker expenditure of energy (Pardeck, 1984b; Stone & Stone, 1983), degree of contact between caseworker and foster family, and amount of rapport building between agency and foster parents (Pardeck, 1984b; Stone & Stone, 1983). Additionally, caseworker change has been linked to placement change (Pardeck, 1984a; Pardeck, 1984b; Pardeck, 1985; Stone & Stone, 1983), highlighting the importance of the relationship between the foster child and their caseworker to the stability of the placement.

The Foster Parent

Other studies suggest that placement change is often a result of the relationship between the child and their caregiver, pointing to important relationship factors such as mutually rejecting interactions between the foster parent and foster child (Doelling & Johnson, 1990; Proch & Taber, 1985). In fact, some studies have pointed to the relative strength of the foster child-caregiver relationship as the greatest predictor of placement change (Smith, 2004; Smith, Stormshak, Chamberlain, & Bridges, 2001; Perry, 2006). Placement change has been associated with parenting support and limit setting (Crum, 2010). Similarly, others have found that the fit between foster parent and foster child characteristics is more predictive of placement change than either foster child or foster parent characteristics alone (Berrick et al., 1998). Studies also suggest that the foster family's ability to integrate the child into their new home is vital to placement stability

(Butler & Charles, 1999; Leathers, 2006), even mitigating the relationship between behavioral problems and placement change (Leathers, 2006).

Individual foster parent characteristics have also been explored in terms of placement change. When success is defined as the ability to maintain longer placements within their homes, successful treatment foster parents tend to be motivated based on personal needs but with emotional maturity (Dando & Minty, 1987), have conventional vocational interests and respect for authority, be orderly, practical, and realistic (Sanderson & Crawley, 1982). Successful foster mothers tend to be enthusiastic, emotionally stable, and poised, while successful foster fathers tend to have higher levels of suspicion and sensitivity, but lower levels of self-discipline (Ray & Horner, 1990). Additionally, single parents and couples between the ages of 45-55 with stable careers are more likely to be successful (Sanderson & Crawley, 1982). Other researchers add the ability to take another person's perspective, a good knowledge of child and adolescent development, and a healthy sense of humor (Fisher & Chamberlain, 2001).

The structure of the foster home itself may also play a role in placement change. Homes with more children, less variety in stimulation and less authoritarian parenting attitudes are less likely to be successful (Smith, 1994). Additionally, the presence (Kalland & Sinkkonen, 2001) and age(s) (Minty, 1999) of biological children in the foster family have been associated with placement change.

The Foster Child

There is some evidence that foster child demographic factors, such as age and ethnicity, are relevant to predicting placement change in that older children (Wulczyn & Chen, 2010 in press; Barth et al., 2007; Connell et al., 2006; James, 2004; Minty, 1999; Pardeck, 1985) and Caucasian foster children (Wulczyn & Chen, 2010 in press; Pardeck, 1984b) may be especially at-risk for multiple placements. Studies examining children

receiving treatment foster care services found similar results for older children and also found that females experienced a significantly greater number of placement changes than males (Smith, Stormshak, Chamberlain, & Bridges, 2001). However, at least one study did not find a significant relationship between gender or ethnicity and placement change (Eggertsen, 2008).

The type of maltreatment that necessitated the removal has been examined as well. One study found that children who have suffered emotional abuse are more likely to experience behavioral-related changes (James, 2004). Another study found that children who were sexually abused were less likely to experience placement changes (Connell et al., 2006).

Age at entry has also been evaluated, with contradictory results. Some studies have found that children who are younger when they enter foster care are more likely to experience more placements (Berrick et al., 1998; McAuley, 1996), while a recent study found that children who were older at entry were more likely to experience placement change (Eggertsen, 2008). The differing results may be due to the fact that children who enter care at a younger age would have more opportunity to experience longer stays in care and thus would have more potential for placement change.

Foster children most likely have either witnessed family violence or been victims of family violence. They often were raised by parents who abused substances or did not supervise or provide for them adequately (Davis et al., 1997). As a result, most children enter care with serious emotional and behavioral problems (Ownbey et al., 2001; Halfon et al., 1995; Kates et al., 1991; Rosenfeld et al., 1997; Wells & D'Angelo, 1994). Children with physical and/or mental health issues may be particularly prone to placement change (Eggertsen, 2008; American Academy of Pediatrics, 2000; Hochman, Hochman, & Miller, 2004). In one study, children with clinical CBCL scores were 2.5

times more likely to experience four or more placement changes (Barth et al., 2007). Studies also suggest that externalizing behaviors, such as conduct disorder, are particularly prevalent among foster children (Barber & Delfabbro, 2003b; Pilowsky, 1995; Landsverk, Davis, Ganger, Newton, & Johnson, 1996; Garland, Landsverk, Hough, & Ellis-MacLeod, 2000) and seem to drive placement changes (Smith et al., 2001; James, Landsverk, & Slymen, 2004).

Although most studies of placement change focus on the emotional and behavioral problems of foster children (Newton et al., 2000; Evans, 1997; Rubin et al., 2004; Browne & Lynch, 1999; Fanshel et al., 1990; Dozier et al., 2002; Lanyado, 2003), it is not completely clear whether behavioral problems were developed as a result of involvement with the foster care system or due to maltreatment-related factors in effect prior to entry (Geroski & Knauss, 2000; Jonson-Reid & Barth, 2000). Some researchers contend that the adjustment difficulties experienced by children with multiple placements contribute to their emotional and behavioral disturbances (McAuley, 1996; Newton et al., 2000). One study attempted to disentangle the relationship between child behaviors and placement change, finding that behavioral problems not only were the strongest predictor of placement change but also were a result of placement change (Newton et al., 2000). Another study controlled for baseline problems at entry and found that placement change was predictive of behavioral problems (Rubin, O'Reilly, Luan, & Localio, 2007). These results point to a potential cycle in which children with behavioral issues are subjected to placement change, creating more behavioral issues and more placement change.

A multitude of studies confirm the relationship between placement change and emotional and behavior problems. These studies suggest that the presence and severity of behavioral problems (Ryan & Testa, 2005; James, 2004; James, Landsverk, & Slymen, 2004; Barber & Delfabbro, 2003a; Dozier, 2002; Leathers, 2002b; Barber, Delfabbro, &

Cooper, 2001; Newton et al., 2000; Redding, Fried, & Britner, 2000; Palmer, 1996; Fanshel et al., 1990; Thornberry, Smith, Rivera, Huizinga, & Stouthamer-Loeber, 1999; Widom, 1991; Pardeck, 1985; Pardeck, 1984a; Proch & Taber, 1985; Stone & Stone, 1983), emotional and mental health problems (Barth et al., 2007; Rubin et al., 2004; Dozier, 2002; Barber et al., 2001; Fanshel et al., 1990; Pardeck, 1985; Pardeck, 1984a; Proch & Taber, 1985; Newton et al., 2000; Stone & Stone, 1983), and issues with attachment (Lieberman, 1987; Fahlberg, 1991; Stovall & Dozier, 1998) experienced by foster children increases as the number of placement changes increases. Associated behavioral issues include conduct disorder (Leathers, 2002b), sexual acting out (Fanshel et al., 1990), juvenile delinquency (Ryan, Hernandez, & Herz, 2007; Ryan & Testa, 2005; Thornberry et al., 1999; Widom, 1991), impaired school functioning (Pecora, Kessler et al., 2006; Pecora, Williams et al., 2006; Cook, 1994; Stone & Stone, 1983), and teen pregnancy (Penzerro & Lein, 1995). Even seemingly necessary changes such as initial removal from the family of origin and removal leading to adoption can have a negative impact on children (Schneider & Phares, 2005; Lanyado, 2003). Indeed, moving a child from a foster care placement to adoption can result in issues such as grief, attachment disorders, and adjustment problems for children (Lanyado, 2003).

The timing of placement change may also be important. In a recent study, the association between placement change and behavior was examined in terms of timing of placement change during their stay in care. It was found that children who found stable placements early in their time in care were more likely to be young, have normal baseline behavior, have no prior child welfare history, and to have birth parents without mental health problems. Alternatively, children who experienced placement changes throughout their time in care were more likely to have behavior problems than those who achieved early stability (Rubin et al., 2007).

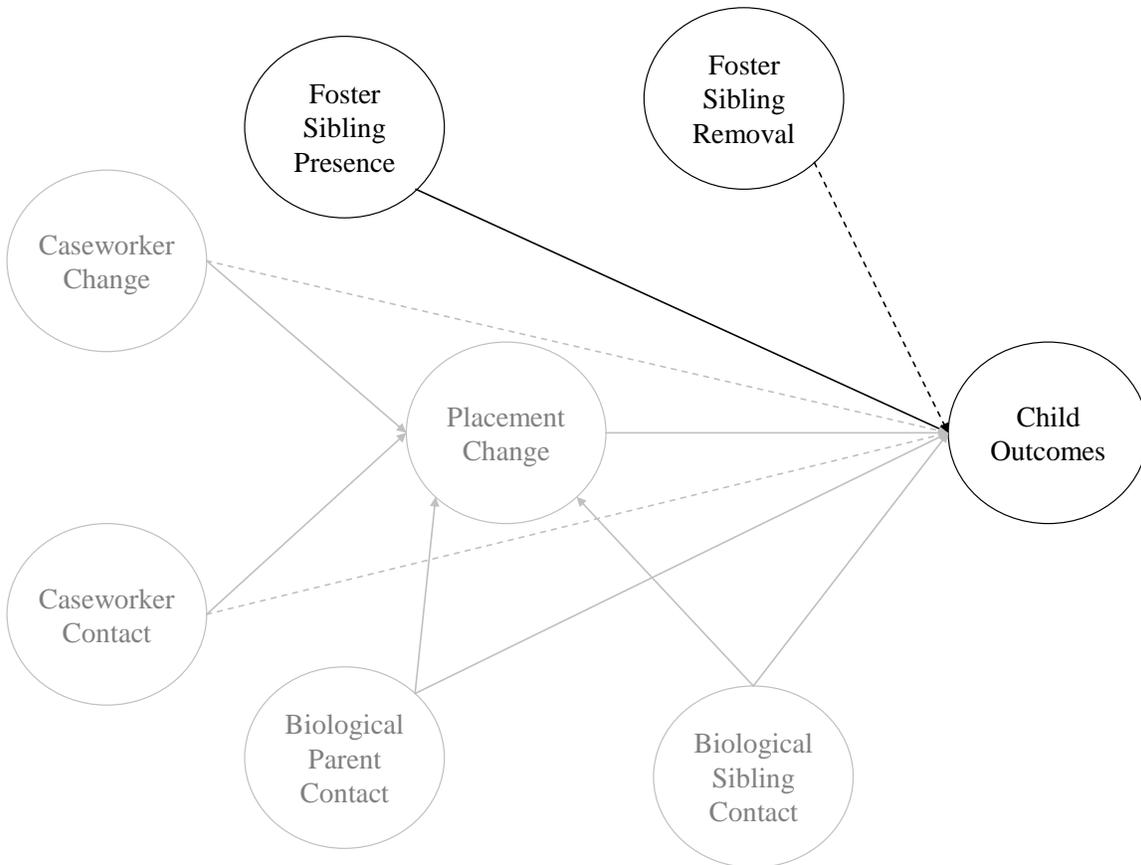
Long-term outcomes of placement change have not been firmly established, however, results from the Northwest Foster Care Alumni Study provide some insights. Analyses of data from foster care alumni indicate that placement changes have a negative impact on long-term outcomes for foster children as adults. Research based on data from the study indicate that placement change is associated with higher risk for depression (White et al., 2009), greater likelihood of mental health diagnoses (Anctil, McCubbin, O'Brien, & Pecora, 2007), and lower likelihood of high school completion (Pecora, Kessler et al., 2006; Pecora, Williams et al., 2006). Findings suggest that a disproportionate number of foster care alumni (more than half) had mental health problems and one in five had three or more mental health problems, including depression, social phobia, panic syndrome, post-traumatic stress disorder (25% within previous 12 months), or drug dependence. It seems that many foster care alumni are in fragile economic situations, with an employment rate of 80.1% and 33.2% with household incomes at or below the poverty level. One-third had no health insurance and 22.2% experienced homelessness (Pecora et al., 2005). In fact, a recent analysis of this population found that for adults ages 23 and 24 who aged out of the foster care system, only half were employed, only 6% had completed a college degree, and 60% of men and 75% of women had been convicted of a crime (Courtney, Dworsky, Lee, & Raap, 2010).

Research has provided evidence that many factors are associated with placement change. It is vital that these factors are better understood in order to alleviate negative mental health and behavioral consequences to children. Some other types of change, while explored less thoroughly, have been either associated directly with negative child outcomes or indirectly through an association with placement change.

FOSTER SIBLING PRESENCE AND REMOVAL

Certainly, placement change implies and encompasses a number of other environmental and relationship changes for foster children. The child's home, living environment, as well as caregivers, and siblings living in the home change when a child's placement changes. Little research has focused on these other changes inherent to placement change. However, foster sibling presence and foster sibling removal have been included in the model for this research (Figure 3.3) based on previous studies that point to a potential indirect relationship between foster sibling removal and a more direct relationship between foster sibling presence and child outcomes.

Figure 3.3: Relationships between Factors: Foster Sibling Presence and Removal



Studies have indicated that each foster child added to a home, increases problematic behavior by youth in the home (Linares, 2006; Moore et al., 1994). This in turn may increase the risk of placement change based on studies associating behavioral issues and placement change (Pardeck, 1985; Pardeck, 1984a; Proch & Taber, 1985; Barber et al., 2001; Stone & Stone, 1983). State legislation acknowledges the importance of these findings by limiting foster home capacities based on concerns that crowding in foster homes limits the time and energy caregivers can invest in the safety and well-being of a foster child. Having multiple children in a foster home may lower the threshold of disruptive behaviors a caregiver can tolerate from a single child before requesting his or her removal (NRCFCPPP, 2007). In fact, studies have shown that foster children living with two or more foster siblings were twice as likely to experience a placement change as those living without foster siblings (Noonan, Rubin, Mekonnen, Zlotnik, & O'Reilly, 2009; Chamberlain & Mihalic, 1998).

Regrettably, no research is available to directly support the notion that foster sibling removal may be important in terms of child functioning. However, there is evidence that peer relationships are vital for children, and that they may develop strong bonds with their peers (Berndt & Hoyle, 1985; Bukowski, Hoza, & Boivin, 1993). Friendships offer children emotional support and promote social and cognitive skills (Berndt, 1989; Hartup, 1992; Parker, Rubin, Price, & DeRosier, 1995; East, Hess, & Lerner, 1987). Friendships can help with loneliness (Bukowski et al., 1993; Parker & Asher, 1993b) and can help children adjust to new situations (Parker & Asher, 1993a). The loss of a relationship with a foster sibling who is also a friend could be distressing for a foster child who has already experienced much loss.

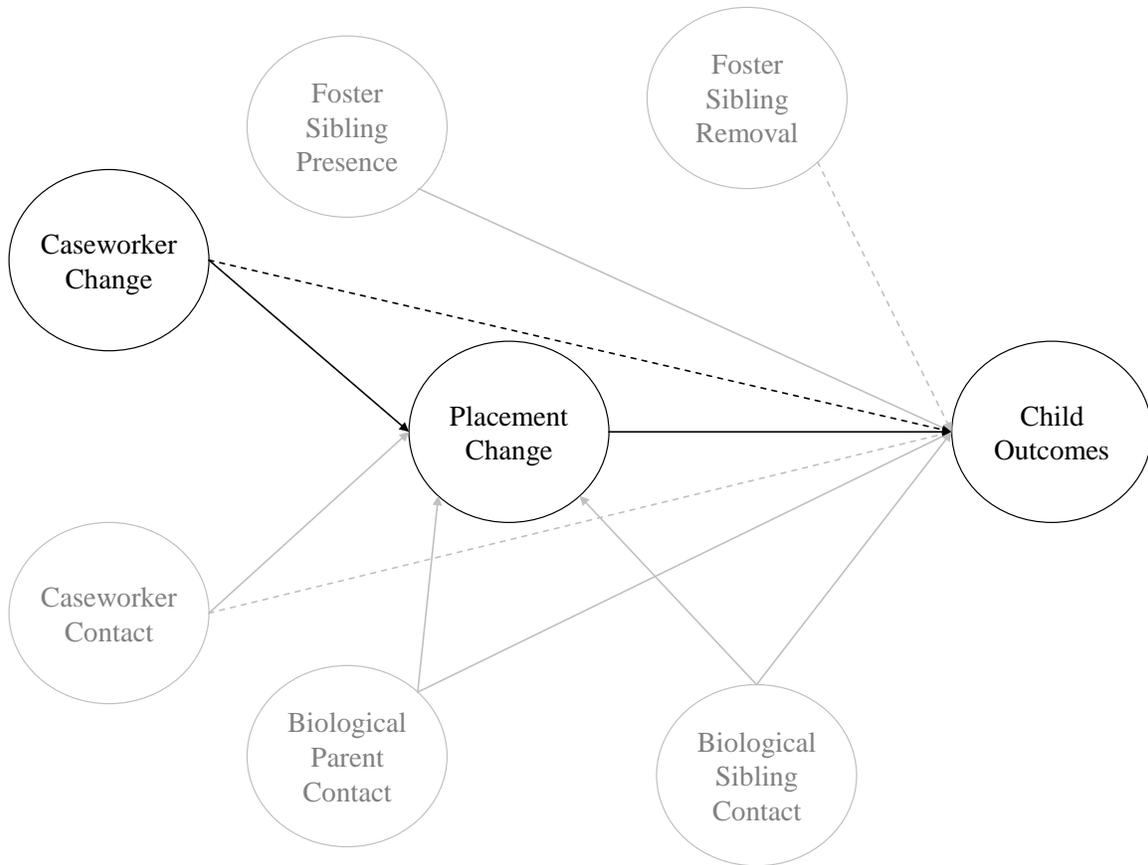
Foster sibling relationships may be especially of interest because foster care system influence on changes in these relationships may be more easily controlled. By

limiting placement changes, foster sibling changes for other foster children in the home are also limited. If an association between foster sibling changes and child functioning is found, there may be a cyclical effect occurring that involves placement change and child functioning. For example, perhaps foster sibling changes in turn increase functioning issues which in turn increases the likelihood of placement change.

CASEWORKER CHANGE

When a child's caseworker changes, another potentially valuable relationship in the child's life is lost. Caseworker change manifests itself in disjointed relationships with foster children and with families (Balfour & Neff, 1993; Graef & Hill, 2000; Curry, McCarragher, & Dellmann-Jenkins, 2005), resulting in a real or imagined lack of support. A sense of support is especially important during crisis situations when placements are at high risk of change (Schormans, Coniega, & Renwick, 2006). The model for this dissertation (Figure 3.4) includes caseworker change as a factor based on previous research supporting a direct association with placement change and an indirect relationship to child outcomes. Studies have found that caseworker change is associated with the receipt of fewer services (Unrau & Wells, 2005) and can lead to poor decision-making and incompetence (Hess, Folaron, & Jefferson, 1992; Rycraft, 1994). Caseworker change requires hiring new caseworkers, which results in an increased number of inexperienced caseworkers with responsibility for overseeing cases and making decisions about children and their families (Balfour & Neff, 1993; Graef & Hill, 2000; Curry et al., 2005).

Figure 3.4: Relationships between Factors: Caseworker Change



It is widely known that caseworker change is a significant problem within the child welfare system (Unrau & Wells, 2005; Hess et al., 1992; Rycraft, 1994). Caseworkers are plagued by low salaries, poor working conditions, and high caseloads, and often experience vicarious trauma (Kreisher, 2002; USHR, 2004). Given these conditions, it is not surprising that annual turnover rates range from 20-50%, with private agencies reporting the highest levels of change (USHR, 2004; USDHHS et al., 2001; Alwon & Reitz, 2001; Graef & Hill, 2000). Caseworker change results in a cycle of instability for child welfare agencies, because more turnover results higher caseloads and

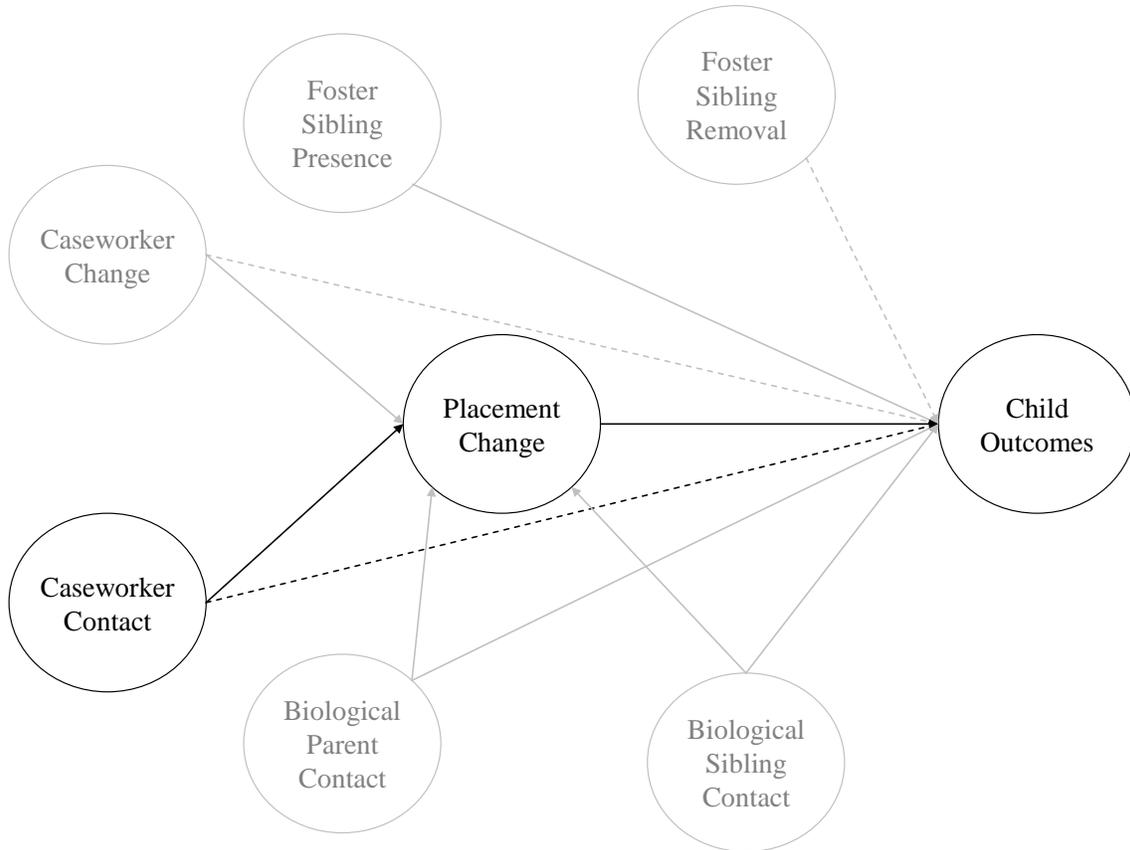
poorer working conditions for those who remain, increasing turnover for them as well (Balfour & Neff, 1993; Graef & Hill, 2000; Curry et al., 2005; USDHHS et al., 2001).

Previous research has pointed to a potentially complex relationship between caseworker change and placement change. Studies have suggested a direct relationship between caseworker change and placement change in that as the number of caseworker changes increases, the number of placement changes increase as well (Eggertsen, 2008; Pardeck, 1984a; 1984b, 1985). Based on research associating placement change with negative child outcomes, caseworker change may indirectly lead to decreases in child functioning. Caseworker change has also been associated with lengthier stays in foster care and decreased likelihood of reunification (Ryan, Garnier, Zyphur, & Zhai, 2006).

CASEWORKER CONTACT

Another aspect of the child's relationship with their caseworker involves the amount and quality of contact with the child. Though little research is available that ties caseworker contact directly with child outcomes (Figure 3.5), the need for high quality, consistent services for foster children has been well-documented (Price, Chamberlain, Landsverk, Reid, Leve, & Laurent, 2008; Redding et al., 2000). Studies have found that foster children who received more services showed fewer negative psychological and behavioral outcomes (Clark, Prange, Lee, Boyd, McDonald, & Stewart, 1994) and were less likely to have experienced caseworker change and also placement change (Price et al., 2008; Unrau & Wells, 2005; Robinson, 1982). Unfortunately, one study found that services to foster children decline over time, and peak only around regularly scheduled reviews and hearings (Unrau & Wells, 2005).

Figure 3.5: Relationships between Factors: Caseworker Contact



Additionally, indirect associations between caseworker contact and negative child outcomes via caseworker change and placement change have been studied. For example, there may be an indirect relationship between caseworker contact and negative child outcomes, in that caseworkers with high caseloads may be less likely to be in contact with children. In turn, higher caseloads have been associated with higher rates of adult mental disorder in foster care alumni (Kessler et al., 2008). Given this, it is especially troublesome that most caseworkers have high caseloads and average between 15 and 30 children at a time (USDHHS et al., 2001).

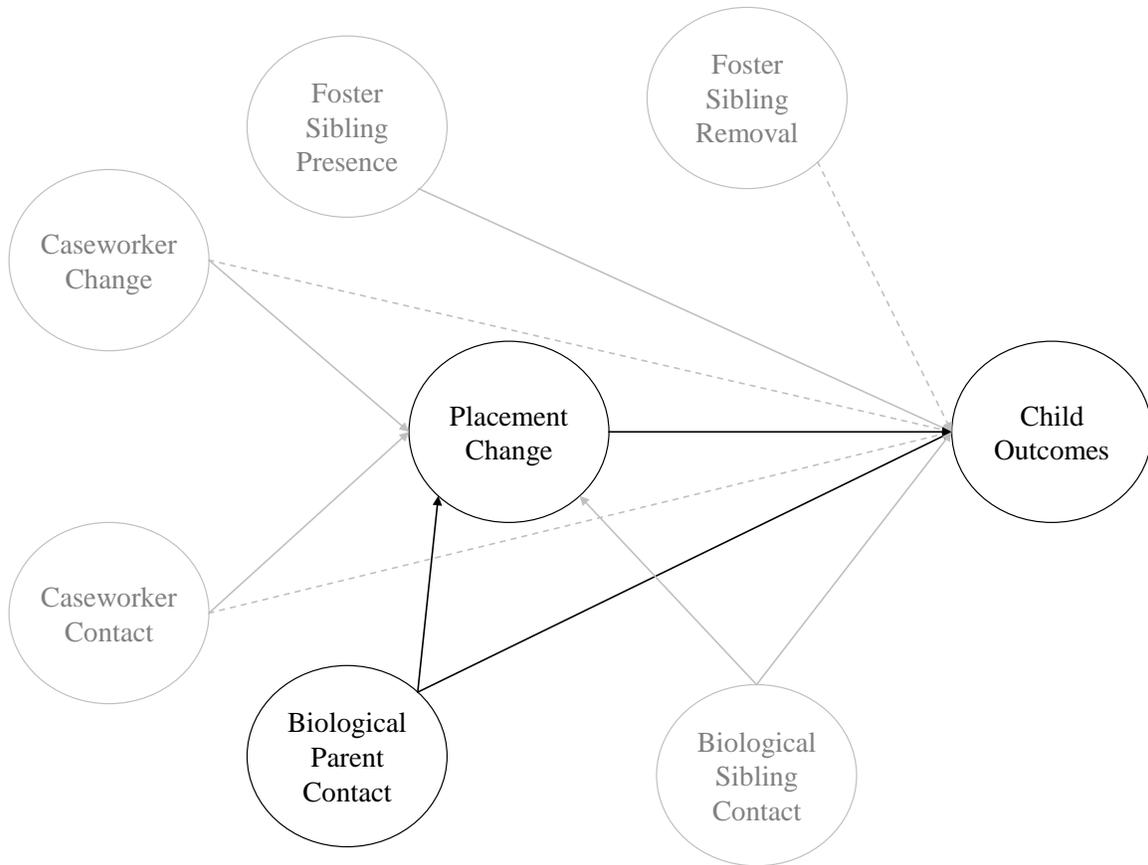
Further, caseworker contact has been directly associated with placement and caseworker change and thus may be indirectly related to child outcomes. Caseworker

contact, rapport building, and energy expended by the caseworker with the foster parents as well as the foster child have also been associated with placement change (Baker, 1989; Stone & Stone, 1983; Pardeck, 1985). Caseworker visits alone have been directly associated with placement change as well (USDHHS, 2009b; Robinson, 1982). One study found that children who experienced multiple placements were visited less often by their caseworkers and received significantly fewer services on average (Robinson, 1982). Despite this trend that is so clearly deleterious to placement stability, in the recent Child and Family Services Reviews, only 80% of the cases reviewed were found to be sufficient in terms of frequency and quality of caseworker visits (USDHHS, 2009b).

BIOLOGICAL PARENT CONTACT

The frequency and duration of foster child contacts with biological parents may also play a role in child outcomes (Figure 3.6). When a child has been removed from a parent's care due to abuse or neglect, parental contact is not always appropriate. However, when it is possible, parental contact is vital for the maintenance of relationships between foster children and their biological parents. Moreover, parental contact is necessary in order to support parent-child relationships that are essential for reunification (Haight, Kagle & Black, 2003). However, maintaining relationships between biological parents and foster children is a complicated matter.

Figure 3.6: Relationships between Factors: Biological Parent Contact



The complexities of parental contact, as reported by caseworkers, include the difficulties inherent to providing support for parent-child interactions while at the same time monitoring and assessing parental behavior (Haight, Black, Mangelsdorf, Giorgio, Tata, Schoppe, et al., 2002). And, although most caseworkers may support family contact, in one study 15-20% believed that it was not beneficial and that parent-child relationships continue to deteriorate despite parental contact arrangements (Delfabbro, Barber & Cooper, 2002). Additionally, foster parents report difficulties preparing children for parental visits and supporting them afterward (Haight et al., 2002). Visits are complex for the biological parents and foster child as well, and their experience of

contact, as well as the quality of the contact and its consequences, vary widely (Haight et al., 2003).

Research has shown mixed results on whether biological parental contact is beneficial for foster children. Clearly, keeping foster children connected to their biological parents, through visiting and other forms of contact, is essential for reunification because it helps to reestablish and maintain family ties during out-of-home placement. Children with parental contact are more likely to be reunified eventually (Leathers, 2003; Leathers, 2002a; Davis, Landsverk, Newton, & Ganger, 1996; Hess, 1987; Delfabbro, Barber & Cooper, 2002). Moreover, some feel that birth family contact is beneficial for children in long-term foster care as well (Mapp, 2002), and frequency of visiting has been associated with less time in care (Seaberg & Tolley, 1986; Delfabbro et al., 2002) and fewer placements while in care (Barber & Delfabbro, 2003b). Additionally, consistent and frequent contact with their biological parents may increase child wellbeing (Cantos & Gries, 1997; Sanchirico & Jablonka, 2000), reduce behavioral problems (Cantos, Gries, & Slis, 1997; McWey & Mullis, 2004; Leathers, 2002b), and promote higher levels of attachment (McWey & Mullis, 2004; Leathers, 2002b). Parental involvement may even prove useful in stabilizing placements when parents appropriately prepare the child for placement (Palmer, 1996).

Undoubtedly, in some cases parental contact can be problematic. Non-compliance with visiting plans is frequently an issue (Moyers et al., 2006; Barber & Delfabbro, 2003b). Additionally, some studies have reported that involvement with biological parents can distress foster children (Gean, Gilmore, & Dowler, 1985) as well as foster families (Moyers et al., 2006; Edelstein et al., 2002; Haight, et al., 2002; Rosenfeld et al., 1997). Parental contact is potentially harmful for foster children due to issues including re-abuse, loyalty conflicts, the burden of keeping secrets and taking care

of parental figures, increased anxiety, and acting out (Moyers et al., 2006; Leathers, 2003; Edelstein et al., 2002; Haight et al., 2002). Parental contact can also negatively impact foster parents, even though they may not have direct contact with the biological parents at all. For example, foster parents have reported feeling undermined by the actions of family members who demonstrate risky or inappropriate behavior (Moyers et al., 2006). More research is necessary to determine in which situations parental contact is advantageous and what steps can be taken to ensure that contacts are as productive and beneficial as possible for all involved parties.

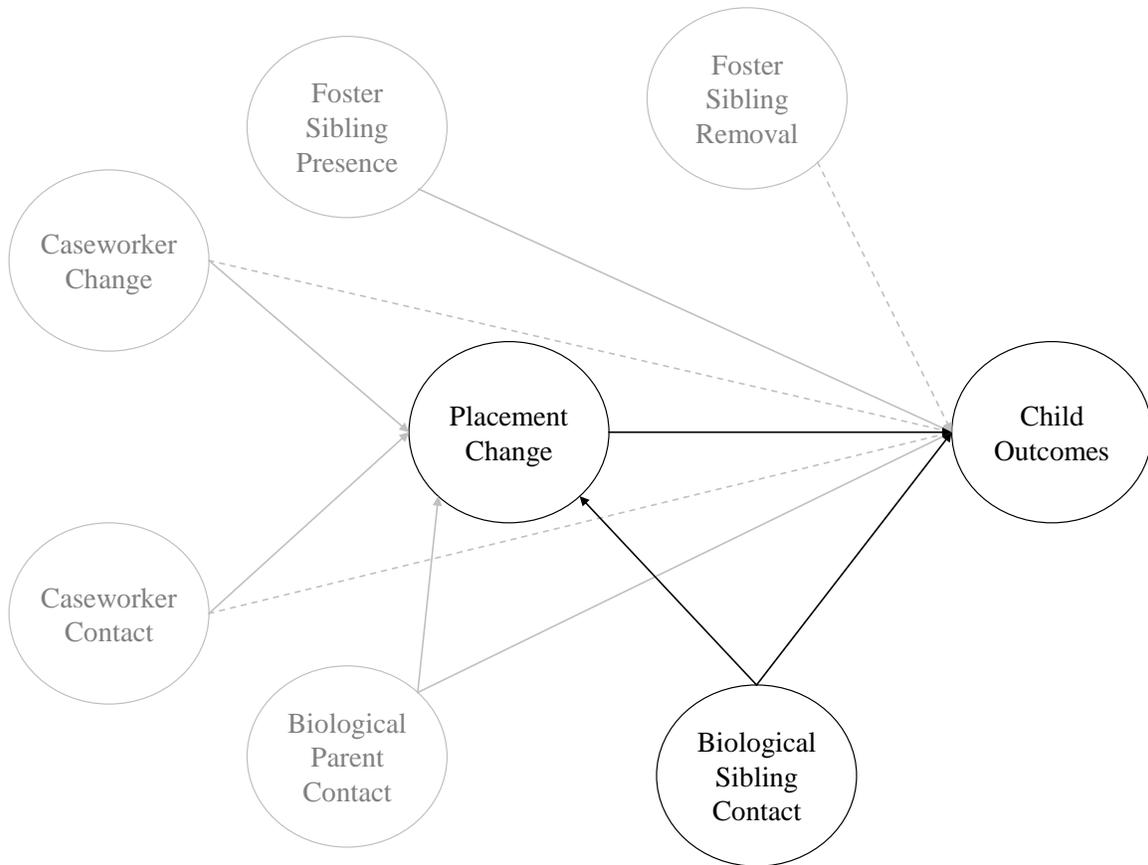
Clearly, the quality of contacts is at least somewhat dependent on the parent-child relationship (Haight et al., 2003). One study reported that foster child satisfaction in relationship to visits was determined more by the quality of the visit than the amount of contact (Festinger, 1983). Attachment between the parent and child is another key factor that may affect the quality of the parental contacts (Haight et al., 2003). Additionally, one study illustrated that mothers who expressed a coherent and flexible understanding of their experiences and expressed affection for the child were more supportive of their children during visits (Schoppe-Sullivan et al., 2007). Finally, preparing parents with strategies for separating at the end of the contact has proven helpful in improving the quality of contacts (Haight et al., 2005).

BIOLOGICAL SIBLING CONTACT

The relevance of the sibling relationship to foster child outcomes (Figure 3.7) may lie in a deep sense of relatedness and belonging to each other (Hindle, 2000; Hindle, 2007). Sibling relationships have been associated with less loneliness, fewer behavioral problems, and higher self-worth (Stocker, 1994) and siblings can help to diminish the impact of adverse circumstances (Werner, 1990; Sanders, 2004). Sibling bonds can be particularly vital for children from dysfunctional families, and sibling relationships may

be intensified. In families where children have been abused and neglected, sibling relationships can be especially complex (Groza, Maschmeier, Jamison, & Piccola, 2003). Children may become more attached to their siblings than children from more functional families (Lamb & Sutton-Smith, 1982). These children may learn to depend on each other in order to cope (Hochman, Feathers-Acuna, & Huston, 1992). Furthermore, older siblings, especially in families involved in the child welfare system, may serve as attachment figures for younger siblings (Steward & Marvin, 1984) and often older siblings are delegated to care for their younger siblings in neglectful families (Grigsby, 1994).

Figure 3.7: Relationships between Factors: Biological Sibling Contact



Sibling relationships may assume even greater importance when children enter foster care. Removal can create an environment of tension and vulnerability for children (Drapeau et al., 2000). Siblings can offer familiarity and continuity during this time of transition (Drapeau et al., 2000; Schibuk, 1989; Hegar, 1988; Grigsby, 1994; Kosonen, 1999), reducing the child's sense of isolation (Kosonen, 1996). Siblings in these situations may develop especially strong bonds and turn to each other for support (Grigsby, 1994; Ward, 1984). In fact, because of the relatively smaller number of significant relationships in a foster child's life as well as the changes in environments and relationships that occur while in care, the sibling relationship may even more vital (Kosonen, 1999). Without access to siblings, the trauma experienced due to removal and placement in foster care often increases (Hegar, 1988).

For these reasons, it is widely accepted that supporting and sustaining sibling bonds should be a priority (Pavao, St. John, Cannole, Fischer, Maluccio, & Peining, 2007). The Adoption and Safe Families Act of 1997 asserts that preference should be given to placing siblings together whenever practical (ASFA, Public Law 105-80). Many states have instituted statutes that mandate reasonable efforts to keep siblings together or to reunify parted siblings unless the placement would be contrary to the health, safety, or welfare of a child (NRCFCPP, 2005a; Albert & King, 2008; Shlonsky et al., 2005). For example, in Texas,

Siblings should be placed together whenever possible, unless it is not in the best interests of the child and the sibling group... DFPS must first consider placement options where siblings can remain together, recognizing that sibling connections are vital for the well-being of a child. If siblings are initially placed separately, it is critical to reunite them as soon as possible. Diligent efforts to reunite the siblings should occur within 60 days, and these efforts must be documented. In the event siblings cannot be reunited within 60 days, continued documentation of all efforts to reunite the siblings must be kept in the record and addressed at the initial and subsequent Permanency Planning Team meetings (TDFPS, 2010a).

Additionally, some states have statutes that support sibling relationships while in care by addressing the minimum amount and type of contact separated siblings should have (NRCFCPP, 2005b). In Texas, separated siblings should have face-to-face contact, at least monthly, if possible. Other types of contact are required when face to face contact is not possible, and caregivers are to encourage contact as well (TDFPS, 2010a).

Despite the acknowledged importance of these relationships, prevalence in terms of sibling placement is difficult to ascertain and data related to sibling contact is even scarcer. However, at least one study reported that foster children were not satisfied with the amount of contact they had with biological siblings (Festinger, 1983). Few nationwide statistics are available on foster children with siblings, which have siblings placed in foster care, and which are placed in the same foster home. Approximately 35,000 siblings are placed separately annually in the United States (Patton & Latz, 1994). Studies with relatively small sample sizes suggest that anywhere from 87% to 98% of foster children have siblings (Staff & Fein, 1992; Aldridge & Cautley, 1976; Festinger, 1983; Zimmerman, 1982), and that 60% to 73% have siblings in foster care (Shlonsky et al., 2005; Staff & Fein, 1992). However, even when siblings are all in foster care, they are not necessarily placed together. Studies report that 40% to 54% are separated from all siblings (Shlonsky, Webster, & Needell, 2003; Drapeau et al., 2000; Staff & Fein, 1992), while 66%-77% are placed with at least one sibling (Shlonsky et al., 2003; Zimmerman, 1982; Hegar, 1988).

Demographic factors associated with intact sibling placements include smaller sibling groups (Wulczyn & Zimmerman, 2005; Hegar, 1988) and sibling groups of the same gender (Shlonsky et al., 2003; Hegar, 1988), while older children (Wulczyn & Zimmerman, 2005; Shlonsky et al., 2003; Hegar, 1988) and those with developmental disabilities (Hegar, 1988) may be less likely to be placed with their siblings.

Additionally, there is some evidence that boys (Aldridge & Cautley, 1976) and white siblings are less often placed together and less likely to remain together (Staff & Fein, 1992).

Children placed in relative care are more likely to be placed with siblings (Shlonsky et al., 2003), while those in group or residential settings are less likely to experience sibling placements (Shlonsky et al., 2003; Hegar, 1988). Finally, placement circumstances, such as the initial placement of one sibling in foster care while the other remains with the birth family, usually results in continued separation even if all children are eventually placed in care (Groza et al., 2003; Shlonsky et al., 2003; Wedge & Mantle, 1991, Hegar, 1988; Albert & King, 2008). Regrettably, at least one study found that only half of foster children with siblings enter care with their siblings (Wulczyn & Zimmerman, 2005).

Researchers seeking to identify factors affecting sibling placement decisions have found that worker and agency philosophy may play a role (Jones & Niblett, 1985; Ward, 1984; Corcran-Rumpppe K, & Groze, 1993) and that systemic barriers often result in the separation of siblings. These barriers include a lack of available and appropriate foster homes that are willing to accept sibling groups (Smith, 1996), not enough workers to ensure that appropriate decisions are made regarding sibling placement, and lack of caseworker training and awareness of the importance of sibling relationships (Groza et al., 2003; Grigsby, 1994). Additionally, caseworkers and foster parents have noted practical difficulties in keeping sibling together, such as children entering care at different times, individual child needs, large age gaps between siblings, and placement disruption (Kosonen, 1996; Smith, 1996). And, for those children who are placed separately, contact may be especially difficult if the children are placed in distant locations (Groza et al., 2003).

It is unclear which sibling relationships are beneficial for children and in what cases sibling placement and contact should be a priority. Siblings may have a negative influence on a foster child and can pose a threat to child functioning (Linares, 2006), though at least one study found no evidence of a relationship between sibling placement and child functioning (Smith, 1998). Some children may have dysfunctional sibling relationships as a result of early experiences and those relationships may reinforce negative patterns from their biological home (Pavao et al., 2007). There are high levels of sibling violence among the foster child population and exposure to sibling violence is a risk factor for impaired psychological functioning and for disruptions in school competence (Linares, 2006). Additionally, caregiver opinions regarding sibling placements and relationships often determine the extent to which siblings are able to have contact (James, Monn, Palinkas, & Leslie, 2008), and the presence of siblings can make it harder for caregivers to incorporate a foster child into the family (Smith, 1996).

Alternatively, studies provide evidence that placement with biological siblings can be beneficial for children. Studies have found that children placed with siblings tend to have fewer emotional and behavioral problems (Hegar & Rosenthal, 2009; Groza et al., 2003; Smith, 1998). Additionally, foster children have reported feeling more emotionally supported, close to a primary caregiver, and that they like living with people in the home when placed with siblings (Hegar & Rosenthal, 2009). In terms of placement outcomes, siblings placed together may be more likely to stay in their first placement than siblings placed separately (Staff & Fein, 1992), and generally sibling placements have been found to be at least as stable as placements of single children or separated siblings (Hegar, 2005; Thorpe & Swart, 1992; Drapeau et al., 2000), if not more stable (Barth et al., 2007; Leathers, 2005; Groza et al., 2003; Staff & Fein, 1992; Aldridge & Cautley, 1976). Additionally, children placed with siblings tend to

experience less time in care than those not placed with siblings (Groza et al., 2003; Grigsby, 1994) and are more likely to exit the system to reunification, adoption, or guardianship (Leathers, 2005). In fact, studies have found that siblings placed completely or partially together reunify at higher rates (Webster, Shlonsky, Shaw, & Brookhart, 2005) and at faster rates than those placed apart (Albert & King, 2008).

Not only may sibling relationships be advantageous for foster children, but lack of contact and placement may be detrimental as well. A recent study found that adolescents with siblings who were placed alone, either throughout their stay in foster care or after a history of sibling placements, were at greater risk for placement change and more likely to remain in long-term foster care than those who were placed with a consistent number of siblings while in foster care (Leathers, 2005). In another study, not residing with siblings predicted placement change among children with emotional and behavioral disorders (Barth et al., 2007). Other studies have found that separated siblings had more emotional and behavioral problems (Groza et al., 2003; Smith, 1998; Aldridge & Cautley, 1976), including internalizing problems, such as depression and self-blame (Hegar & Rosenthal, 2009). Moreover, girls may be especially at risk for psychosocial issues when separated from their siblings. One study found that girls separated from all of their siblings were reported to have significantly poorer mental health and socialization than girls placed with at least one sibling (Tarren-Sweeney & Hazell, 2005). Thus, previous research as well as current thinking and policies support the notion that siblings should be placed together whenever possible. However, at least one study has indicated that the quality (positive or negative) of the sibling relationship may mediate resulting child behavioral problems (Linares, Li, Shrout, Brody, & Pettit, 2007).

SUMMARY

Evidence supporting the negative effects of placement change is well documented, but other types of changes in environments and relationships may also have a considerable effect on child outcomes. The model for this research (Figure 3.1 above) depicts the relationship between various factors and child outcomes based on earlier studies. The model illustrates that placement change, foster sibling presence, foster sibling removal, caseworker change, caseworker contact, biological parent contact, and biological sibling contact may all affect foster child outcomes. These factors were drawn from previous research, but are also relevant based on the theoretical model for this study, which provides a framework for viewing the effects of foster care system involvement on children.

Based on the conceptual framework provided for this study, it is expected that change in environments and relationships affects foster child outcomes negatively and that consistency positively affects child outcomes. Thus, factors related to environmental and relationship changes that have been associated with foster child outcomes in previous research are included to elucidate their potential influence on child functioning. This study will examine various types of changes in order to more fully understand the effects of the foster care system on child functioning.

Chapter 4: Methods

A longitudinal dataset provided by KaleidaCare Management Solutions was identified that contained foster child data relevant to the aims of this dissertation such as environmental stability, relationship consistency, and child functioning. Secondary data analysis was used to evaluate the effects of change on child functioning, operationally defined as foster child scores on the Child and Adolescent Functional Assessment Scale (CAFAS[®]). The model analysis focused on the effects of three types of system-imposed relationship changes (placement change, caseworker change, and foster sibling change) and the child-caseworker relationship (caseworker contact) on foster child functioning (CAFAS). Some variables, including time in care, age, race, and gender, were included to control for their effect on child functioning. Specifically, a negative association between placement change, caseworker change, foster sibling removal, and foster sibling presence and total CAFAS score was expected. A positive association between caseworker face-to-face contact and total CAFAS score was also expected. Analyses were designed to explore the relative importance of these independent variables and their cumulative effect on child functioning.

The following discussion reviews the methods used for collecting data for the study, along with a description of the participating agencies. Additionally, the sample is described and compared with national statistics. Each of the variables used in the study is operationally defined, including the independent variables (placement change, foster sibling presence, foster sibling removal, caseworker change, caseworker contact), control variables (time, age, race, gender), and the dependent variable (CAFAS total score). The method of analysis is also addressed with a detailed description of the analysis technique,

Growth Curve Analysis. Finally, the model used for analysis is reviewed, along with the hypotheses for the study.

DATA COLLECTION

The data for the study were entered by foster care agencies via web-based software provided by KaleidaCare Management Solutions, Inc. (KaleidaCare). Data were collected from KaleidaCare's normalized, relational SQL 2008 database. In order to abide by Institutional Review Board of the University of Texas at Austin protocols, participating agencies obtained their individual de-identified dataset and each agency sent the data to the researcher separately. To prepare the data for analyses, scripts were created to flatten out the normalized database into a research-ready format and transform the data so that it could be imported into SPSS.

KaleidaCare's software is used by foster care agencies to track placement services and manage cases, maintaining historical as well as ongoing information such as treatment planning, progress logs, and case notes for foster children. Additionally, the software allows for entry of the CAFAS electronically. Thus, agencies chosen for participation in this study use KaleidaCare's software and consequently their data were available through the associated single, existing dataset. Secondary data analyses were performed on this dataset.

KaleidaCare's software was chosen because of the appropriateness of the data available through the software's database to the research questions, the advantage of using a single database for analyses of multiple agencies' data without merging disparate datasets, the validation that occurs within the KaleidaCare software to avoid erroneous data entry when possible, and the researcher's familiarity with the software. Using this system, foster care supervisors, caseworkers, therapists, and foster parents add and access information related to foster children in their care.

Currently, approximately eighty agencies across the nation are using KaleidaCare's software. Participating foster care agencies range in size, may operate across multiple states, and offer different types of foster care services. These agencies are licensed by state Child Protective Services agencies to place children in safe and appropriate homes while they are in foster care. They are responsible for performing foster home studies and ensuring that the child's needs are being met while in the State's care (USDHHS, 2010b; Harris, 2004). Participating foster care agencies use KaleidaCare's software on a daily basis to track information related to staff, foster families, placement histories, and foster children.

When a foster child is referred to a foster care agency the child's demographic information, current condition, and history are documented, a caseworker is assigned to the child, and the child is placed in one of the agency's foster homes. All of this information can be recorded using KaleidaCare's software, including the child's initial CAFAS score. Additional CAFAS scores can be documented on an ongoing basis, though the frequency of collection depends on individual agency policies and procedures. When caseworkers or placements change, this information can also be tracked through KaleidaCare's software. Caseworkers can use the software to document all communication with foster children, as well as visits with family members.

Among the agencies that use KaleidaCare's software, those providing Treatment Foster Care (TFC) services that also assess foster children using the CAFAS were identified for participation in the study. Selection from within the TFC population provides a sample consisting mostly of adolescents with psychological and behavioral issues (Meadowcroft, 1989; Webb 1988). This population is well-suited for CAFAS assessment, as the CAFAS has been shown to have robust psychometric properties and validity for use with foster children and children with behavioral and emotional

disturbances (Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1997; Hodges, 1997; Hodges, Wong, & Latessa, 1998).

Twenty-one agencies were identified that use KaleidaCare's software and also assessed foster children using the CAFAS. Of those, only ten provided TFC services and six of those agreed to participate in the study. However, three agencies had a small number of foster children in their dataset who received TFC services and also had more than one CAFAS assessment. Thus, after these criteria were taken into consideration, three private agencies were identified for participation in the study: Omni Visions, Inc. (Omni), DePelchin Children's Center (DePelchin), and Children's Home Society of West Virginia (CHSWV).

Omni Visions, Inc.

Incorporated in March 1991, Omni is a multi-state child placement agency that provides many services for children and teens as well as adults with special needs. For youth, Omni's services include foster care and adoption, but also in-home services. Omni's TFC program includes counseling and intervention services such as psychological counseling, behavior management support, crisis intervention, respite care, and tutoring. Located in Tennessee, North Carolina, and Kentucky, Omni provides TFC services to youth who need intensive support, supervision, and personal intervention. These children often display unruly or delinquent behaviors and have extensive medical issues or significant behavioral and emotional needs. TFC caseworkers are limited to a caseload of 7-10 foster children (Omni Visions, Inc., 2008; S. Frazier, personal communication, February 23, 2010).

Based on data derived from Omni's KaleidaCare dataset, Omni is currently serving approximately 700 foster children and over the years has served nearly 4,000 foster children in their TFC program. For Omni foster children that have been

discharged, the average length of stay in care is approximately 473 days. The average number of days in a particular placement is 143, with approximately 8.5 placements per child. There are currently about 3500 CAFAS assessments entered into Omni's dataset, and about 2000 foster children have been assessed using the CAFAS. The average number of CAFAS assessments completed per child is 1.7. Across the study's time frame, Omni's use of the CAFAS differed. Originally, the CAFAS was assessed at admission and discharge and then every three months. Later, the CAFAS was only assessed at admission and discharge (S. Frazier, personal communication, February 23, 2010).

DePelchin Children's Center

DePelchin has served children and families in the Houston area since 1892. DePelchin serves over 16,000 children and family members annually through 30 programs, including foster care, adoption, residential, counseling, and prevention. DePelchin cares for over 500 children at any one time in approximately 350 foster homes (DePelchin Children's Center, 2009).

DePelchin's KaleidaCare dataset contains approximately 530 foster children that are currently placed in DePelchin foster homes, though the agency has served nearly 3,500 foster children since its inception. Among discharged foster children, the average length of stay in care is approximately 370 days. Foster children have 1.5 placements on average during their time in care, and stay an average of 173 days in each placement. DePelchin's dataset contains about 5,700 CAFAS assessments for roughly 1900 foster children. Each child is assessed approximately three times using the CAFAS during their stay.

Children's Home Society of West Virginia

CHSWV has served children and families since 1896. They provide comprehensive child welfare, behavioral health, social casework, and advocacy services to over 6,887 children each year, throughout West Virginia. Programs provided include adoption, foster care, in-home, emergency shelter, respite, mediation, education, visitation, and reunification services. Each year, CHSWV cares for approximately 250 children through their TFC program (Children's Home Society of West Virginia, 2010).

CHSWV's KaleidaCare dataset includes over 100 foster children that are currently active in their TFC program, and over 550 foster children that have been served by their TFC program over the years. For CHSWV foster children that have been discharged, the average length of stay in care is approximately 178 days. These children experience approximately two placements during their time in care, and the average number of days in a particular placement is 175. There are currently about 5000 CAFAS assessments entered into CHSWV's dataset, and a little over 2,850 foster children have CAFAS assessments. The average number of CAFAS assessments completed per child is 1.79.

SAMPLE

A description of the sample is provided that includes an overview of data related to foster children nationally as well as the population of foster children who have received services from the three participating agencies. National statistics on foster children are reviewed to present information about the overall population from which this sample was drawn. Additionally, comparing these data to that of the particular sample in this study provides information related to the generalizability of the results to the general foster child population.

National Statistics

Approximately one-fifth (20.7%) of children reported for maltreatment are placed in foster care nationally. However, in some states these rates are as high as 40%. The majority of these children were neglected (69.2%), though 8.6% suffered from physical abuse, 3.2% from sexual abuse, and 14.3% from multiple types of maltreatment (USDHHS, 2010a).

Approximately 800,000 children are served nationally by the substitute care system each year, and on any given day, there are approximately half a million children in substitute care in the United States (USDHHS, 2009d), and about 70,000 children receiving Treatment Foster Care services (Castrrianno, 2007). Slightly fewer than 300,000 children are removed from their homes each year and about the same number exit care, usually through reunification (52%), adoption (19%), or emancipation (10%). The rate of foster care entry varies across States from 1.8 per 1,000 children to 10.4 per 1,000 children in 2005. The average age of children in care is 9, and 8 as they enter care, though approximately 30% of foster children enter care as adolescents (USDHHS, 2009d).

Males and females are generally equally represented in the foster care system; 47% are female and 53% are male (USDHHS, 2009d). The majority of children in substitute care are either Caucasian-American (40%) African-American (31%), or Hispanic/Latino-American (20%). Other races include American Indian/Alaska Native (2%), and Asian-American (1%). Approximately 5% of foster children are Multi-Racial (5%) and for 2% of foster children, race is unknown (USDHHS, 2009d). The percentage foster children who are members of African-American, Hispanic/Latino-American, and American Indian/Alaska Native racial groups entering foster care is as much as three times larger than the percentage of these children in the child population in some states. This

discrepancy is especially prevalent for African-American children, where these statistics apply to thirty-nine States (USDHHS, 2009c). Though little data is available specifically for children receiving Treatment Foster Care services, recent studies indicate racial proportions of TFC children that reflect lower percentages of African-American and Native-American foster children (20.7%) than in the general substitute care population (Larson, 2010).

Though permanency goals are mainly reunification (49%) or adoption (24%), actual outcomes for children are often quite different. For children exiting foster care during 2008, 52% were reunified, 19% were adopted, 10% were emancipated, 8% were living with relatives, and the final 10% were either under guardianship, transferred to another agency, ran away, or died. Each year approximately 30,000 foster children are emancipated because they are too old to receive substitute care services any longer (USDHHS, 2009d).

Children who remain in substitute care for at least the average of 27.2 months (USDHHS, 2009d) are likely to experience more than two placements, despite federal mandates to limit placements to two or fewer. This is especially concerning for the 24% of foster children who remain in care for 3 years or more (USDHHS, 2009d), since as time in care increases so does the number of placement experienced by foster children. While approximately 80% of states met the criteria of two or fewer placement settings for foster children in care for a year or less, only 27% were able to maintain two or fewer placements for foster children in care for over a year (USDHHS, 2009c).

There are many types of placement settings available to care for children who have been removed from their homes. In 2008, 47% of children were placed with foster families, 24% were placed with relatives, 10% were placed in institutions, 6% were placed in group homes, and the rest (12%) were either in pre-adoptive homes, trial home

visits, had run away, or were living independently. The type of placement setting that is appropriate for a given child may change multiple times throughout their time in care, based on agency policies and legislative mandates.

Children placed with foster families may receive regular foster care or TFC services. Statistics specific to foster children receiving TFC services is particularly sparse. However, some studies have indicated that children spend an average of four years in other types of placement settings before placement in a TFC home (Timbers, 1990). Youth in TFC programs may have demanding medical needs (Berrick et al., 1993; Fisher & Chamberlain, 2001) and most often suffer from severe emotional and behavioral issues (Meadowcroft, 1989, Webb 1988). TFC placements are at a higher risk of disruption as well. Studies that have reviewed change rates for TFC placements estimate that up to 70% disrupt (Berrick et al., 1998; Palmer, 1996; Staff & Fein, 1995; Stone & Stone, 1983).

Participating Agency Sample Statistics

The final sample consisted of discharged children who had been in care for thirty days or more with a minimum of one TFC placement that lasted at least two weeks. Although there were thousands of foster child records documented in the dataset across the three agencies, only 897 met these criteria. However, it was also required that each child have a date of birth available and be at least six years old at the time of entry into care.

Further, each child must have had at least three CAFAS assessments in order to perform the required analyses. This offers an advantage over studies of individual change that collect data at only two time points, as this is often inadequate for studying individual growth (Bryk & Weisberg, 1977; Rogosa, Brandt, & Zimowski, 1982; Bryk &

Raudenbush, 1987). With only two measurement points, results can provide a misleading representation of the true underlying growth trajectory (Boyle & Williams, 2001).

Based on the criteria for inclusion, data for many foster children could not be included in the final dataset for the study. In fact, the final sample consisted of approximately 47% of the total sample available in the participating agency datasets. Demographic comparisons were made in order to assess the generalizability of the final sample to the overall statistics for all TFC foster children in the three participating agencies. The differences in age, gender, and race between the two groups was negligible (see Appendix A for detail), so the following description of the sample will focus solely on the final sample (N=333) used for analyses compared to national statistics. CHSWV contributed data for 204 (61%) children, DePelchin contributed data for 71 (21%) children, and Omni Visions, Inc. contributed data for 58 (18%) children (Table 4.1).

Overall, females and males were relatively equally represented, with 149 females (45%) and 184 males (55%). This was generally true of CHSWV as well (88 females: 43%; 116 males: 57%). Omni had a higher percentage of males (22 females: 38%; 36 males: 62%), while DePelchin had a slightly higher percentage of females (39 females: 55%; 32 males: 45%). These results are similar for foster children nationally as well.

Table 4.1. Gender and Race

	Gender	Race
<u>Foster Children Nationally</u>	47% females 53% males	31% African-American 40% Caucasian-American 20% Hispanic/Latino-American 5% Multi-Racial 2% American Indian/Alaska Native 2% Other/Unknown
<u>Final Sample: TFC Foster Children in Participating Agencies</u>		
<u>Agency (N)</u>		
Omni (58)	38% females 62% males	22% African-American 69% Caucasian-American 0% Hispanic/Latino-American 7% Multi-Racial 0% American Indian/Alaska Native 2% Other/Unknown
DePelchin (71)	55% females 45% males	17% African-American 54% Caucasian-American 10% Hispanic/Latino-American 18% Multi-Racial 1% American Indian/Alaska Native 0% Other/Unknown
CHSWV (204)	43% females 57% males	11% African-American 78% Caucasian-American 1% Hispanic/Latino-American 6% Multi-Racial 1% American Indian/Alaska Native 3% Other/Unknown
Total (333)	45% females 55% males	14% African-American 72% Caucasian-American 2% Hispanic/Latino-American 9% Multi-Racial 1% American Indian/Alaska Native 2% Other/Unknown

Caucasian-Americans were highly represented (238; 72%), while 47 (14%) African-Americans were included in the sample, which also included 29 (9%) multi-racial children, 8 (2%) Hispanic/Latino-American children, 3 (1%) American Indian/Alaska Native children, and 8 (2%) children whose racial identity was not known. These statistics generally held true for agencies individually as well, though DePelchin

had a higher percentage of Hispanic/Latino-American children (10%) and multi-racial foster children (18%), while Omni had a higher percentage of African-American children (3%). These results were dissimilar to those of foster children nationally, with lower percentages of Caucasian-American foster children (40%) and higher percentages of African-American (31%) and Hispanic/Latino-American (20%) foster children. However, the results are not as dissimilar to recent estimates of the Treatment Foster Care population, reflecting higher percentages of Caucasian-American foster children and lower percentages of African-American foster children (Larson, 2010).

Foster children included in the final sample were admitted between November 14, 2003 and December 26, 2008 (Table 4.2). By agency, children were admitted from January 2005 to October 2008 for Omni, from the November 2003 through August 2008 for DePelchin, and from March 2004 to December 2008 for CHSWV. Overall, children were discharged between June 26, 2004 and May 21, 2009. By agency, foster children were discharged from the June 2006 to January 2009 for Omni, from December 2005 to March 2009 for DePelchin, and from June 2004 through May 2009 for CHSWV.

Table 4.2. Age at Entry, Admission Dates, and Discharge Dates

Agency (N)	Age at Entry	Admission Dates	Discharge Dates
Final Sample: TFC Foster Children in Participating Agencies			
Omni (58)	13.59	01/26/2005-10/13/2008	06/01/2006-01/03/2009
DePelchin (71)	10.96	11/14/2003-08/26/2008	12/21/2005-03/17/2009
CHSWV (204)	13.90	03/05/2004-12/26/2008	06/26/2004-05/21/2009
Total (333)	13.22	11/14/2003-12/26/2008	06/26/2004-05/21/2009

Foster children in the sample entered care at age 13, on average. This was similar to average at entry for CHSWV and Omni, though the average age for DePelchin was 10. These results are higher than foster children nationally, who enter care at age 8 on average. It is expected that the focus on TFC children increased the average age for the sample.

MEASURES

The dependent variable for this study is child functioning, operationally defined using the CAFAS. Control variables are time, age, gender, and race. Independent variables for this study include placement change, caseworker change, foster sibling removal, foster sibling presence, and caseworker contact. The inclusion of these independent variables reflects the belief that child stability can more accurately be measured when these other types of change are taken into account. This definition reflects an extension of the definition of stability required by federal guidelines, which are not comprehensive and focus on placement change alone. Further, though the federal guidelines provide a foundation for common definitions and measures of placement change, they fail to take into account all placement changes experienced by foster children by excluding temporary living conditions.

Placement Change

Two operational definitions of placement change were utilized. Both variables included all overnight placements, regardless of the reason for placement or length of time in the placement. Additionally, if children were discharged and later re-admitted (e.g., trial birth home placements), the time the child was out of care was counted as an additional placement. However, the first definition excluded temporary living conditions while the second definition did not. A distinction is made here between short-term living conditions and temporary living conditions. For these operational definitions of placement change, change excluding temporary living conditions would include short-term living conditions, such as placements that only lasted a short period of time or placements in emergency shelters, which are not necessarily temporary. Alternatively, temporary living conditions are those that are transitory by definition, such as respite care and non-permanent hospitalization.

Foster Sibling Change

Foster sibling change was operationally defined using two variables: foster sibling presence and foster sibling removal. Foster sibling presence is further defined as the number of foster siblings who were present in a home when the child joined the placement. Foster sibling removal is the number of foster siblings who were removed from a child's placement. Foster sibling removals were counted as long as the foster sibling was placed overnight, but regardless of the length of stay in the home beyond that. Foster sibling removals were not counted if the child was in a placement type besides a foster home at the time that the foster sibling entered or left the placement. For example, if the child was in a group home or residential facility it would be unclear as to whether the foster child had even met these foster siblings, so no foster sibling changes were counted. Foster sibling presence was counted regardless of placement type. Thus, the resulting variable was in part reflective of the number of placement changes as well as the size of the homes or facilities in which the child was placed.

Caseworker Change

Since multiple workers can be assigned to a child at any given time, the operational definition of a caseworker change included the number of caseworkers who were at one point assigned to the child and were removed from responsibility for the child's care after at least 30 days. Caseworkers who were disassociated with the child near the time of discharge (one week before discharge or later) were not included in this count because it was considered an administrative change in preparation for the child's discharge. In cases where no caseworkers were assigned to a child, the caseworker change variable reflected missing data. In cases where workers were assigned to a child but none were disassociated, the caseworker change variable reflected a 0.

Caseworker Contact

The operational definition of caseworker contact is the number of face to face interactions with the foster child that were documented by caseworkers. Other types of casework, such as phone calls and paperwork were excluded from this variable. Instances where contact was attempted but did not occur were also not included. If no caseworker contacts were documented for a foster child, the variable's value would be missing. If caseworker contacts were documented, but none were face to face, the variable's value would be 0.

Child Functioning

Child functioning, the dependent variable for this study, is operationally defined as the total CAFAS score, which measures impairment in the daily functioning of children 6-17 years of age who may have emotional, behavioral, mental health, or substance use problems (Hodges, 1997; Hodges, 2004). Child functioning is assessed across a variety of settings based on behavioral descriptions within eight domains. These domains are school/work, home, community, behavior toward others, moods/emotions, self-harmful behavior, substance use, and thinking (Hodges, 2004). Table 4.3 contains a description of each of the eight CAFAS domains.

Table 4.3. CAFAS domains

CAFAS Domain	Description
School/Work	Ability to function satisfactorily in a group educational environment
Home	Extent to which youth observes reasonable rules and performs age appropriate tasks
Community	Respect for the rights and property of others
Behavior Toward Others	Appropriateness of youth's daily behavior
Moods/Emotions	Modulation of the youth's emotional life
Self-Harmful Behavior	Extent to which the youth can cope without resorting to self-harmful behavior or verbalizations
Substance Use	Youth's substance use and the extent to which it is not appropriate or is disruptive
Thinking	Ability of youth to use rational thought processes

For each youth, agencies are expected to complete a CAFAS assessment within 30 days of intake, once every three months, and within 30 days of discharge. Based on clinician feedback, the CAFAS is considered relatively easy to use (Hodges, 1997; Bates, 2001). Clinicians report that once they are familiar with the assessment tool, it takes approximately 10 minutes to complete the CAFAS (Hodges, 1997).

Scoring

For each of the eight domains, items are hierarchically categorized by four levels of impairment, from severe to no impairment. Each of the categories is associated with a weighted score (severe impairment=30, moderate impairment=20, mild impairment=10, and minimal or no impairment=0). Raters endorse all appropriate items based on their knowledge of the child's behavior and circumstances. The highest weighted score associated with the category in which an item is present is used as the final score for each of the eight domains. Thus, the highest possible score for each domain is 30. The

CAFAS total score is determined by summing the scores across domains to create a score from 0-240.

Use of the CAFAS

The CAFAS has been used extensively at local, state, and national levels, primarily in the areas of mental health, juvenile justice, and child welfare. It has been mandated for use in approximately thirty states for performance outcome assessment and service eligibility determination for children receiving mental health services (Bates, 2001). The CAFAS can be used for a variety of purposes, including treatment planning, treatment monitoring, program evaluation, and outcome assessment. It can be used to link problematic behavior with target goals and track progress toward specified goals (Boydell, Barwick, Ferguson, & Haines, 2005; Hodges & Wotring, 2004; Hodges, 2004). It has even been used to determine the appropriate levels of care for children (Hodges, 2004).

The CAFAS is thought to be particularly useful for assessing outcomes for youth with serious emotional disturbance (Hodges, 1997), and has been used as such in numerous studies (Roy, Roberts, Vernberg, & Randall, 2008; Mears, Yaffe, & Harris, 2009; Jacobs, Roberts, Vernberg, Nyre, Randall, & Puddy, 2008; Hodges, Xue, & Wotring, 2004; Hodges & Wotring, 2004; Vernberg, Jacobs, Nyre, Puddy, & Roberts, 2004; Jenson, Turner, Amero, Johnson, & Werrbach, 2002; Rosenblatt & Rosenblatt, 2002). It has also been used to evaluate outcomes for adolescents involved in the juvenile justice system (Abram, Choe, Washburn, Romero, & Teplin, 2009; Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006; Hodges, 2005a; Lyons, Griffin, Quintenz, Jenuwine, & Shasha, 2003; Auerbach, May, Stevens, & Kiesler, 2008). Moreover, the CAFAS has been used to evaluate foster care (Reifsteck, 2005) and residential care programs (Gorske, Srebalus, & Walls, 2003), as well as adopted children with reactive

attachment disorder (Wimmer, Vonk, & Bordnick, 2009). It was chosen for use in this study because of its particular relevance to measuring outcomes for children with emotional and behavioral issues.

Reliability

The psychometric properties of the CAFAS are drawn from studies that examined the measure's reliability and validity. Studies of the assessment's reliability assessed the consistency of the measure when assessed repeatedly over time. Studies of the assessment's validity evaluated the extent to which the CAFAS actually measures child functioning (Rubin & Babbie, 2008).

Reliability for the CAFAS has been studied in terms of internal consistency, test-retest reliability, and interrater reliability. Internal consistency refers to the extent to which the items that comprise the assessment tool are correlated (Rubin & Babbie, 2008). Some evidence of internal consistency was found with coefficient (Cronbach's alpha) values ranging from .63 to .68 for middle-income youth referred for mental health problems (Hodges & Wong, 1996) and .73 to .78 (Hodges, Doucette-Gates, & Liao, 1999) for low-income youth receiving mental health services. In order to test the measure's stability over time (Rubin & Babbie, 2008), the test-retest reliability of CAFAS scores was examined by comparing ratings gathered over a period of one week. Pearson product-moment correlation coefficients indicated high levels of agreement: total score (0.95), role performance (0.84), behavior toward self and others (0.82), moods/emotions (0.91), and thinking (0.89; Hodges & Wong, 1996).

Interrater reliability refers to the degree of consistency in response between raters of an assessment tool (Rubin & Babbie, 2008). Studies have reported satisfactory interrater reliability for the CAFAS (Hodges & Gust, 1995; Hodges & Wong, 1997). Interrater reliability was found to be relatively high for the CAFAS using training

vignettes, with Pearson product moment correlations ranging from .74 to .99 based on comparisons with criterion scores, and rater agreement correlations ranged from .63 to .96 (Hodges & Wong, 1996).

Interrater reliability for the CAFAS is strengthened by a well-developed training manual with numerous training vignettes and relatively stringent training requirements. The CAFAS is completed by clinicians or other trained administrators. Minimally, it is required that one person from each agency attend a CAFAS training annually or at least every two years and the trained individual is then responsible for training the others at their agency (Hodges, 2005b). Attendees have reported high levels of satisfaction in the ease of achieving interrater reliability within their agencies (Boydell et al., 2005).

Validity

Validity refers to the degree to which systematic error is an issue with a particular measurement tool (Rubin & Babbie, 2008). Studies of the validity of the CAFAS have addressed the tool's content validity, criterion-related validity (including concurrent validity, known groups validity, and predictive validity), and construct validity. Content validity ensures that a measure includes the range of meanings within the concept of child functioning. Studies indicate that there may be some overlapping content between severity scales, as well as some redundancy (Bates, 2001; Bates, Furlong, & Green, 2006). Additional concerns have been raised regarding the construct validity of the domains. One study found that over 25% of clinicians disagreed with the domain assignment of 40% of the items (Bates et al., 2006).

Criterion-related validity assesses the extent to which measurement results are similar to other external criteria that are indicative of the variable being measured (Rubin & Babbie, 2008). The validity of the CAFAS has been evaluated based on three types of criterion-related validity: concurrent, known groups, and predictive validity. Concurrent

validity refers to the correspondence of the assessment tool with criterion that are known concurrently (Rubin & Babbie, 2008). Concurrent validity was examined in a study that found a significant relationship between improvement in CAFAS scores and improved education placements for children (Roy et al., 2008). In another study, youth with more serious psychiatric disorders had higher CAFAS scores than youth diagnosed with less serious disorders (Hodges, Doucette-Gates, & Liao, 1999).

Known group validity assesses whether a measurement tool accurately differentiates between groups that are known to differ in relation to the variable being measured (Rubin & Babbie, 2008). The known groups validity of the CAFAS has also been examined based on the measure's ability to distinguish between groups of children. CAFAS scores have significantly differentiated children with and without psychopathology (Ezpeleta et al., 2006). Additionally, CAFAS scores have differentiated youth in residential settings from youth living in their own homes or in regular foster care (Hodges, Doucette-Gates, & Liao, 1999).

Predictive validity refers to the association between the assessment tool and criterion that will occur in the future (Rubin & Babbie, 2008). Predictive validity has been examined in various studies with encouraging results (Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1997; Hodges, Doucette-Gates, & Kim, 2000). The CAFAS total score has been shown to be predictive of the likelihood of contact with the law and poor school attendance, even after controlling for age, gender, and risk factors (Hodges & Kim, 2000). These findings are consistent with other research indicating that the CAFAS contributes to prediction of recidivism in juvenile delinquents (Quist & Matshazi, 2000), involvement with the juvenile justice system, and school-related problems (Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1996). CAFAS scores have also been associated with service outcomes, including number of service

episodes (Hodges, Doucette-Gates, & Liao, 1999), cost of services (Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1997), and number of services (proportion of unique variance explained ranging from .04 to .11; Hodges & Wong, 1997). Higher impairment scores on the CAFAS have also been associated with previous psychiatric hospitalization (Hodges, Doucette-Gates, & Liao, 1999), more serious psychiatric diagnoses (Hodges, Doucette-Gates, & Liao, 1999), number of days in out-of-home placement (Hodges, Doucette-Gates, & Kim, 2000), restrictiveness of living environment (Hodges, Doucette-Gates, & Kim, 2000; Hodges & Wong, 1997; Hodges, Doucette-Gates, & Liao, 1999; Hodges & Wong, 1996), and poor social relationships (Hodges & Wong, 1996).

Construct validity refers to the extent to which the CAFAS is correlated with other measures that are theoretically related to child functioning (Rubin & Babbie, 2008). Evaluation of the correspondence between CAFAS scores and other measures of child functioning has shown moderate but consistent results. In comparison with the Children's Global Assessment Scale (CGAS; Shaffer et al., 1983), Pearson correlations ranged from 0.72 to 0.91 (Hodges, 1997). In comparisons with other measurement tools at four points in time (Hodges & Wong, 1996), Pearson correlations were as follows: the Child Assessment Scale (.54, .56, .55, .52; Hodges, 1990), the Parent Child Assessment Scale (.59, .62, .58, .63; Hodges, 1990), the Burden of Care Questionnaire (.36, .42, .43, .42; Bickman, 1996; Bickman, Heflinger, Pion, & Behar, 1992), and the Child Behavior Checklist (CBCL; .42, .49, .48, .47; Achenbach, 1991). Other studies have also found moderate correlations between the CGAS and the CBCL (Hodges & Gust, 1995; Rosenblatt & Rosenblatt, 2002), as well as the Youth Self Report (Rosenblatt & Rosenblatt, 2002). Moderate results were also found for Spanish-speaking youth in comparison with the CBCL, the Columbia Impairment List, and the Self-Perceived Role

Competence assessment (Ezpeleta et al., 2006). Moreover, because of its well-established validity, recent studies have used the CAFAS to verify the validity of new assessment tools as well (King et al., 2009; Nakamura, Daleiden, & Mueller, 2007).

Clinical Utility

The clinical significance of change in CAFAS scores has been investigated as well. One study found that a 30 point change in score could be used to distinguish between types of placement following discharge (Roy et al., 2008). Additionally, some studies have pointed to the CAFAS's sensitivity in tracking changes in youth functioning over time (Hodges & Wong, 1997; Hodges, Wong, & Latessa, 1998; Hodges, Doucette-Gates, & Liao, 1999). Moreover, there is some evidence that the CAFAS may be a useful component of culturally competent assessment, as a Spanish version is available and no significant differences for gender and racial/ethnic groups have been found (Hodges & Wong, 1996; Ezpeleta, Granero, de la Osa, Doménech, & Bonillo, 2006).

Criteria for Inclusion

In order for a CAFAS assessment to be included in the study, all eight domains must have been assessed so that a total score could be calculated. With the exception of the initial CAFAS, each following assessment must have been at least 7 days after the previous assessment. Additionally, each child must have an admission CAFAS assessment and a discharge CAFAS assessment. Based on the knowledge that a CAFAS score assessed immediately upon admission into foster care may not reflect full knowledge of child behavior and circumstances (Hodges, 2005b), the admission CAFAS assessment was operationally defined as the last assessment completed within 60 days after the date of admission. If no CAFAS assessment met that criteria, then the last CAFAS assessment within 30 days before admission was used. The discharge CAFAS

assessment was the first assessment completed within 90 days after discharge. If no assessment met that criteria, then the last assessment within 30 days before discharge was used. The logic used for choosing admission and discharge CAFAS assessments provided the study with the most accurate assessments of child functioning possible and a sample that included as many foster children as possible.

Control Variables

The control variables for the study are time, age, gender, and race. Time is operationally defined as the number of months from admission into the participating agency's care to discharge. If foster children were discharged from care and later re-admitted, the time during which the child was discharged was counted in order to get a more comprehensive view of the child's experience. Age was calculated based on the foster child's date of birth and is operationally defined for this study as the foster child's age at the time of entry into the participating agency's care. Gender and race are both operationally defined based on definitions provided by the participating agencies. For all agencies, gender was defined as male, female, or unknown. Though terms for various racial distinctions varied, all agencies identified foster children based on race. The racial categorizations provided by each agency were combined into the following categories: Caucasian-American, African-American, Hispanic/Latino-American, and Other-American. See Appendix B for details on the re-categorization of race for each participating agency.

Excluded Variables due to Missing Data

Not all variables discussed in the literature review that were theoretically relevant to foster child outcomes were available for analysis due to a lack of documentation or sporadic documentation to the degree that analysis was not possible. For example,

visitation with biological family members was documented by Omni only, and this information was captured intermittently and did not differentiate between visits with biological parents and biological siblings. In fact, no visits were documented in 96% of the foster child records overall. It was completely missing from CHSWV's and DePelchin's datasets and was missing in 77% of Omni's foster child records. It also did not consistently include duration of visits or missed visits.

Sibling placements were also potentially available in the dataset, but the variable was missing in 92% of the foster child records. This is so disparate from national norms (approximately 50%) that it seemed highly unlikely that the variable was being recorded consistently enough to analyze. Additionally, while information related to caseworker contacts was available in the dataset, only the number of contacts was able to be analyzed. Additional information regarding contacts such as the duration, missed appointments, and other types of contacts such as documentation of phone calls and paperwork was not available.

Other variables that were available in the dataset were completely missing for all three of the participating agencies. These included child psychosocial information such as diagnoses and psychotropic medications. Additionally, placement history factors, such as type of maltreatment, number of previous placements, level of care, age upon entry into foster care and total length of time in care were also not available. Though age upon entry into the foster care agency and time in the agency's care were available, foster children often have prior foster care histories that would include total time in foster care and age upon entry into the foster care system. This limits the study because the independent variables may include changes following a long history of other changes of which we are unaware.

ANALYSIS

The analytic plan for the study includes a discussion of Growth Curve Analysis (GCA) and data transformations and dataset restructuring resulting from the choice of this statistical analysis technique. Additionally, the theoretical model for the GCA is presented and the hypotheses of the study and relevant research questions for the analyses are reviewed. All quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 15.0.0 for Windows. SPSS was used for data management, data diagnostics, descriptive statistics, and GCA. Descriptive statistics were used to analyze foster child demographic data as well as data related to the dependent variable and the independent variables. GCA was used to test the theoretical model.

Growth Curve Analysis

The hypotheses for this research are tested using GCA to address the longitudinal nature of the study design. GCA is appropriate for this study because it provides a method for investigating the process of change in foster child functioning using repeated observations. Though GCA is sometimes performed within a structural equation modeling framework, this study used a hierarchical linear modeling (HLM) platform, viewing repeated observations as nested within individuals (Raudenbush & Bryk, 2002). GCA using a HLM framework is also referred to as linear mixed effects modeling and will heretofore be referred to simply as GCA. GCA combines powerful HLM techniques with repeated measurement designs (Preacher, Wichman, MacCallum, & Briggs, 2008; Duncan, Duncan, & Strycker, 2006).

GCA is used to model longitudinal data as individual growth curves in order to overcome many of the restrictions associated with traditional repeated measures analysis. It requires multiple observations for each subject, so that waves of data are nested within

individuals. It can be thought of as a multi-level HLM, where time is the defining Level 1 variable and the subjects define Level 2 (Raudenbush & Bryk, 2002). The statistical equations involved in GCA are basically regression equations. In fact, the central difference between "regular" regression and regression formulated as GCA is that there are separate error terms at Level 1 and Level 2 (Boyle & Williams, 2001).

GCA includes a mixture of fixed and random effects. Fixed effects are population average values while random effects are those that vary across individuals. In this study, all independent and control variables represent fixed effects only. But it is also posited that every foster child may have a unique functioning trajectory while in care (the random effects), and this centers around average trajectories for the independent variables (the fixed effects). For simplicity, linear trends are assumed, giving rise to random and fixed effects for both intercepts (child functioning scores at admission) and slopes (rate of change in functioning over time). Each combination of fixed effects may have its own average, and each foster child has a unique trajectory about the fixed effects average. An advantage of GCA is that the inclusion of both random and fixed effects addresses multiple sources of variation (Singer & Willett, 2003).

Though it is a relatively new technique, the modeling of growth with HLM is being used in substantive research. Fields such as psychology and nursing have embraced this innovative method of modeling changes over time and it has recently been used to address topics such as functional impairment among HIV-positive patients, change in the depressive symptoms of college students, and predictors of change in Alzheimer's patients, for examples (Shin, 2009; Crystal & Sambamoorthi, 1996; Tate & Hokanson, 1993).

Advantages of GCA

GCA offers several advantages over other statistical analysis techniques of repeated measurement. Statisticians emphasize its conceptual elegance and its management of long-standing problems inherent to more traditional methods, such as analysis of variance (ANOVA; Bryk & Raudenbush, 1987; Rogosa et al., 1982; Rogosa & Willett, 1985). Since ANOVA tests for the amount of variance explained by systematic repeated measurement, it does not capture individual growth, whereas GCA uses each subject's initial y-intercept and slope as the unit of analysis (Hartman, Sage, & Webster-Stratton, 2003; Raudenbush & Bryk, 1992). Additionally, GCA fits the individual slopes over time intervals to the group's average slope, while ANOVA uses the interaction between subjects and repeated measurement as the error term (Tabachnick & Fidell, 1996).

Another advantage is that the data requirements associated with GCA are flexible. The number and spacing of time points can vary across subjects so that subjects with any data can be included in the analysis (Francis, Fletcher, Stuebing, Davidson, & Thompson, 1991). This is an important advantage for this study because foster children are often in care for differing lengths of time and are assessed at time intervals that are unevenly spaced. Additionally, predictors of growth, in this case change in total CAFAS score, can be time dependent or time independent. For this study, those predictors include control variables, with the exception of time itself (age, gender, and race), that are independent of time. Time, defined as months from admission to assessment, and the independent variables (placement change, foster sibling presence, foster sibling removal, caseworker change, and caseworker contact) are all time dependent.

Finally, HLM provides a framework for GCA in which some assumptions that normally must be met in order to conduct analysis using repeated measures designs do

not apply. For example, the assumption of sphericity requires that, in order to compare means across time, the variances for differences between temporal observations are equal. For HLM, the assumption of sphericity that applies to other repeated measures designs does not need to be met (Keselman, Algina, & Kowalchuk, 2001). Additionally, the assumption of independence in observations for repeated measures does not apply to HLM because it was developed to account for correlations between observations (Raudenbush & Bryk, 1992; Goldstein, 1995). Thus, the use of GCA is an advantage for the current study since CAFAS assessments for the same foster child are not independent.

Assumptions

The assumptions that should be tested for GCA are the same as those that apply to HLM. These include assumptions related to linearity, normality, residual error, and homoscedasticity. In order to accurately estimate the relationship between variables using GCA, there should be a linear relationship between the independent variables and the dependent variable. Linearity can be determined through visual observation, though this method may lack clarity. An alternative method involves examination of the correlation between the dependent variable and each of the independent variables. If this assumption is not met, the GCA analysis will underestimate the presence and strength of the relationship between the independent variable and the dependent variable (Singer & Willett, 2003).

Both univariate normality and that error is normally distributed are important assumptions to meet in the testing of nested designs, as departures from normal distributions will result in incorrect testing of the models. Univariate normality is tested by assessing whether the distribution of the variables is normal using indicators of variable skewness, kurtosis, and outlier analysis. The normal distribution of error is tested based on the assumption of residual error. To test the assumption, the distribution

of residual error is assessed visually using a normal probability plot. This depicts the observed cumulative and expected normal probabilities of occurrence of the standardized residuals. The assumption of normally distributed residual error is met if the figure displays a linear pattern, which would indicate that the observed values conform to those that would be expected and that the variance of the residual errors is constant (Raudenbush & Bryk, 1992).

The assumption of homoscedasticity is also assessed visually in order to ensure that the variance of the residuals is homogenous across predicted values of the dependent variable. A scatterplot of the predicted and residual values can be used to test this assumption. If the assumption is met, the resulting graphic should show a random pattern, with no visually apparent funnels or shapes (Singer & Willett, 2003).

Interpretation

The content of the reporting of GCA results is relatively well-established. Standard reporting begins with a description of the intercept, which is the average value of the dependent variable at the time of initial measurement. In other words, the intercept represents results at a time equal to zero in the growth curve. This allows for inferences related to the initial value across the independent variables (Hartman et al., 2003; Tate, 2000).

As with the standard R-squared, the percentage of variability attributable to the independent and control variables can be computed. Results are determined by comparing a model with no predictors to the model with predictors. This is generally followed by a review of the results related to each of the predictors, citing the degrees of freedom and t-score for the variable, along with its significance in the model (Singer & Willett, 2003).

Though one might expect a discussion of the discrete contribution of each independent variable, there does not yet exist a standard way to calculate individual effect sizes with GCA. Removing any variable alters the model in such a way that its particular contribution cannot be measured. Because GCA relies on all variables in order to analyze the model, the individual contribution of each variable cannot be estimated accurately (Snijders & Bosker, 1999).

Missing Data

Missing data were handled using the least maximum likelihood technique, which tends to be unbiased and is highly efficient in terms of sample size. Using this method, the marginal distribution of the observed data provides the likelihood for the unknown parameters. The estimation computed standard errors from the observed information, rather than the expected information. This likelihood method was chosen over other techniques such as case deletion and single imputation because more data were able to be included for analyses. Unlike other methods, responses are weighted more heavily, and at least not excluded completely (Schafer & Graham, 2002).

Data Restructuring

In order to use GCA, the dataset was transformed from a foster child-level dataset to an assessment-level dataset so that a repeated measures method of analysis could be utilized. There were three options for creation of the longitudinal independent variables (placement change, caseworker change, foster sibling removal, foster sibling presence, and caseworker contact) in the assessment-level dataset. First, counting all occurrences of each independent variable from the admission CAFAS assessment to the discharge CAFAS assessment would provide cumulative information but would not take advantage of GCA's ability to track changes over time. Ultimately, this method was rejected

because it would include events that occurred after the assessment was completed. Alternatively, calculation of events from the admission CAFAS assessment to the next CAFAS and then from each CAFAS assessment to the following CAFAS assessment was considered. However, this method was rejected as well because it would not take into account cumulative effects, ignoring changes or contacts that occurred before the previous CAFAS assessment.

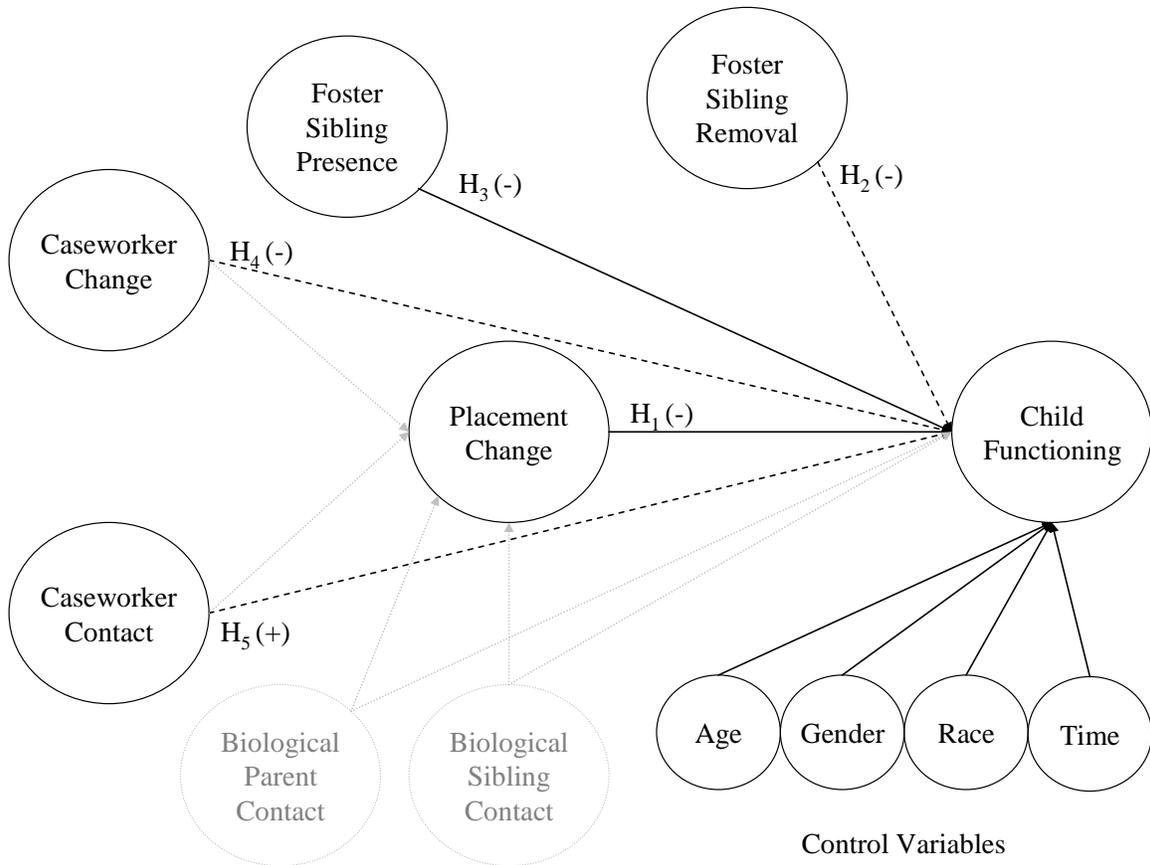
Instead, all events occurring prior to each CAFAS assessment were included, while all events occurring after each CAFAS assessment were ignored. This method allowed for inclusion of the cumulative effects of the independent variables without including events that could not have affected the child functioning measure. In transforming the dataset, the frequency of each independent variable was calculated in relation to its value from entry into agency care to assessment. Thus, all events were counted based on their frequency from admission to CAFAS assessment.

GCA Model and Hypotheses

The specific aim of this study was to evaluate the effects of three types of system-imposed relationship changes (placement change, caseworker change, and foster sibling change) and the child-caseworker relationship (caseworker face-to-face contacts) on foster child functioning (CAFAS). It was hypothesized that a negative association between severed relationships (placement change, caseworker change, and foster sibling change) and child functioning would be found, and that continuity in relationships (caseworker contact) would positively impact foster child functioning. Analyses examined these direct relationships and their relative importance using GCA. The cumulative effects of the longitudinal independent variables on functioning were taken into consideration by including occurrences prior to the previous CAFAS assessment in counts of these variables.

The relationships were hypothesized based on previous research cited in the literature review. Control variables for the model are age, gender, race, and months from entry to assessment. As seen in Figure 4.1, model to be tested includes the relationship between the independent variables and child functioning. A negative association (-) is expected between child functioning and placement change, caseworker change, foster sibling presence, and foster sibling removal, and a positive association (+) is expected between caseworker contact and child functioning. The solid arrows indicate that previous research has supported the hypothesized relationship in the model, and dotted arrows indicate that previous studies have not yet explored the variable's relationship with child functioning. Two variables that were present in the original theoretical model were not available for analysis in this study and thus are grayed out in the illustration of the GCA model: biological parent contact and biological sibling contact. Additionally, the theoretical association of caseworker change and caseworker contact with placement change will also not be address in this study. In future renderings of the model, these relationships will not be illustrated.

Figure 4.1: Illustration of the GCA Model



Hypothesis 1 (H₁): There is a negative relationship between placement change and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of foster sibling presence, foster sibling removal, caseworker change, and caseworker contact.

Hypothesis 2 (H₂): There is a negative relationship between foster sibling removal and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling presence, caseworker change, and caseworker contact.

Hypothesis 3 (H₃): There is a negative relationship between foster sibling presence and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling removal, caseworker change, and caseworker contact.

Hypothesis 4 (H₄): There is a negative relationship between caseworker change and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling presence, foster sibling removal, and caseworker contact.

Hypothesis 5 (H₅): There is a positive relationship between caseworker contact and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling presence, foster sibling removal, and caseworker change.

Chapter 5: Results

The results of this research include descriptive statistics for both foster child-level and assessment-level data as well as correlational analyses. Growth curve analysis (GCA) was used to explore the relationship between the control variables, the independent variables, and child functioning. Control variables included time (months from admission to assessment) and demographic information (age, gender, and race). The model used dichotomous forms of the independent variables: placement change, foster sibling change (foster sibling removal and foster sibling presence), caseworker change, and caseworker contacts. Results from analysis of the GCA model are provided. Additionally, further exploratory analyses are examined and potential explanations for results that were contrary to study hypotheses are addressed.

UNIVARIATE DESCRIPTIVE STATISTICS

Descriptive statistics are provided on both the foster child-level and assessment-level datasets. Child-level data includes independent variables that are indicative of the foster child's experience while in agency care. These descriptive analyses will illustrate the changes experienced by the foster children while in care as well as the contacts the child had with their caseworker. CAFAS statistics are also provided for child-level data in order to illuminate information related to child functioning at admission into care and to compare child functioning at admission to discharge. Assessment-level information is included to describe the dataset as it was used for model analysis, with multiple records per foster child and a separate record for each assessment. Assessment-level data includes CAFAS assessment total scores, as well as data related to the independent variables calculated from the time of admission to the given CAFAS assessment.

Child-Level Descriptive Statistics

Time in Care

Univariate descriptive statistics for the foster child demographic variables, including age, gender, and race were addressed in the previous Sample section. To further illuminate the experience of foster children in the sample in terms of amount and type of services provided, the average amount of time foster children spent in TFC programs was compared with the average amount of time foster children spent in care overall (Table 5.1). Sample foster children generally stayed in agency care for an average of 497.44 days. Averages were similar for DePelchin and CHSWV, though the average days in care was greater for foster children in Omni's (638.63) and less for children in CHSWV's care (341.32). The average time in care for foster children nationally is much higher (820 days). It is expected that this discrepancy is due to the fact that national statistics include time in care across all agencies regardless of whether the child transfers between agencies. In this sample, the average days in care includes only time in each agency.

Average time in care includes days when the foster children were in the care of the participating foster care agency, but were in other types of placements than TFC. The difference between the overall average time in agency care and the time in care receiving TFC services specifically illustrates the average number of days when sample foster children were not in TFC during their stay with the participating agencies. On average, foster children were other types of placements besides TFC for 56.38 days. This difference was higher for Omni, with children in other types of care besides TFC for 122.03 days, on average. The difference was less for DePelchin (14.02) and for CHSWV (26.56).

Table 5.1. Average Time in Care

Agency (N)	Time in Care	Time in Care (TFC Only)	Difference
Omni (58)	638.63	516.60	122.03
DePelchin (71)	442.86	428.84	14.02
CHSWV (204)	341.32	314.76	26.56
Total (333)	497.44	441.06	56.38

Placements and Placement Change

Descriptive data for placements were analyzed in order to compare the average number of placements in TFC programs with the average number of placements in all types of programs (Table 5.2). For these analyses, placements do not include temporary living conditions with the exception of DePelchin’s data, where it was impractical to separate out which placements were in temporary living conditions and which were not. While in care, sample foster children experienced an average of 3.64 placements. The average number of placements was about the same for Omni (3.67), lower for DePelchin (1.97), and higher for CHSWV (4.21). The majority of these placements were in TFC homes. With approximately of 1.93 TFC placements for each foster child, 1.71 placements were not TFC, on average. DePelchin had the highest percentage of placements that were TFC, with only .26 placements not TFC, on average. Omni had a lower percentage, with an average of 1.46 placements that were not TFC, and CHSWV had the lowest percentage of placements that were not TFC, with 1.46 placements not TFC, on average.

TABLE 5.2. AVERAGE NUMBER OF PLACEMENTS WHILE IN CARE

Agency (N)	Number of Placements	Number of Placements (TFC Only)	Difference
Omni (58)	3.67	2.21	1.46
DePelchin (71)	1.97	1.71	0.26
CHSWV (204)	4.21	1.88	2.33
Total (333)	3.64	1.93	1.71

In order to examine the average frequency and rate of placement change with different definitions of placement change, comparisons between placement changes including temporary living conditions those excluding temporary living conditions were reviewed (Table 5.3). Results for the average number of placement changes parallel those for placements. For example, if a foster child had four placements while in care, they experienced three placement changes. Overall, foster children in the final sample experienced 2.64 placement changes, on average. This figure is similar to Omni (2.67), though DePelchin foster children had fewer changes (0.97), and CHSWV had more (3.21). Average rates of placement change were calculated by dividing the number of placement changes by the months in care. Overall, results indicate that foster children in the sample experienced approximately .25 placement changes each month, or three placement changes per year. Results were similar for Omni and CHSWV, though DePelchin’s rate of placement change was lower (.06 placement changes each month, or .75 placement changes per year).

Table 5.3. Average Number of Placement Changes and Rates of Placement Change

Agency (N)	Number of Placement Changes	Monthly Placement Change Rate	Number of Placement Changes (with TLC)	Monthly Placement Change Rate (with TLC)
Omni (58)	2.67	0.24	8.12	0.69
DePelchin (71)	0.97	0.06	0.97	0.06
CHSWV (204)	3.21	0.31	4.21	0.44
Total (333)	2.64	0.25	4.20	0.40

An alternative definition of placement change includes temporary living conditions as placements. Results indicate an average of 4.20 placements including temporary living conditions. These results are similar for CHSWV (4.21), but much higher for Omni (8.12). For DePelchin, results indicate no change between the two definitions. Upon further exploration, it was found that DePelchin’s process of documenting temporary living conditions in the dataset made it infeasible to extract the data in a way that temporary living conditions could be identified. Placement change rates including temporary living conditions indicated approximately .40 changes per month, or 4.80 changes per year. These results were similar for CHSWV (.44) and higher for Omni (.69 changes per month or 8.4 changes per year). Again, DePelchin’s results did not differ based on definition because temporary living conditions could not be identified.

Caseworker Variables

The number of caseworker changes and caseworker contacts provides insight into the experience of foster children in the sample of their caseworker (Table 5.4). Foster children in the final sample experienced an average of 3.2 caseworker changes. This statistic was higher for DePelchin (4.87), but lower for Omni (2.00) and CHSWV (2.92). Foster children had face to face contact with their caseworkers on average 3.47 times each month. This number was slightly higher for CHSWV (3.94) and Omni (4.21) and lower for DePelchin (3.94).

Table 5.4. Average Caseworker Change and Average Monthly Caseworker Contacts

Agency (N)	Caseworker Changes	Caseworker Contacts
Omni (58)	2.00	4.21
DePelchin (71)	4.87	1.18
CHSWV (204)	2.92	3.94
Total (333)	3.20	3.47

Foster Sibling Variables

Descriptive data related to the average number of foster sibling presence and foster sibling removal were examined in order to illustrate the experience of foster children in the sample with foster siblings (Table 5.5). For foster siblings who were removed from a foster child's placement, the average number was 17.98 foster siblings. This number was higher for CHSWV, with an average of 21.80 foster siblings leaving care and lower for Omni (11.96) and DePelchin (9.86). Descriptive results for foster siblings who were present in the home at the time of the foster child's placement were also examined. On average, 15.37 foster siblings were present when the foster child joined the placement. This number was higher for CHSWV (18.59) and lower for Omni (8.78) and DePelchin (9.93).

Table 5.5. Average Number of Foster Sibling Removals and Foster Siblings Present in the Placement

Agency (N)	Foster Sibling Removals	Foster Siblings in Placement
Omni (58)	11.96	8.78
DePelchin (71)	9.86	9.93
CHSWV (204)	21.80	18.59
Total (333)	17.98	15.37

CAFAS General Statistics

Descriptive data on the CAFAS provides information on the frequency and rate of assessment for the sample as well as comparisons of CAFAS scores from admission to discharge (Table 5.6). During their time in care, foster children in the sample were assessed approximately 4 times using the CAFAS. This holds true for all agencies, and generally for all foster children receiving services from these agencies. Foster children in the sample were assessed approximately .5 times per month, or 1.5 times per quarter.

The rate of assessment per month was slightly higher for CHSWV (.55) and slightly lower for Omni (.43) and DePelchin (.41).

Table 5.6. CAFAS Child-Level Statistics

Agency (N)	Number of Assessments	Monthly Assessment Rate	CAFAS Scores at Admission	CAFAS Scores at Discharge	Admission to Discharge
Omni (58)	3.52	.43	104.83	67.76	-37.07
DePelchin (71)	4.66	.41	69.15	60.00	-9.15
CHSWV (204)	3.89	.55	98.97	92.16	-6.81
Total (333)	3.99	.50	93.63	81.05	-12.58

CAFAS total scores are based on the sum of the eight individual domain scores, which are rated from 0 to 30, with 30 indicating severe impairment, 20 indicating moderate impairment, 10 indicating mild impairment, and 0 indicating minimal or no impairment. Thus, potential total scores for the CAFAS range from 0 to 240, with higher scores indicating more impairment. For the sample, total CAFAS scores at admission averaged (93.63), though admission scores were slightly lower for DePelchin (69.15) and slightly higher for CHSWV (98.97) and Omni (104.83). Given that a score of 30 on any one CAFAS domain may indicate severe emotional or behavioral issues (Hodges, 2005b), these numbers indicate that this population of TFC children enters care with high levels of psychological and behavioral issues, as expected given that that is the target population for TFC. At discharge, average total CAFAS scores remained concerning in terms of level of functioning, though decreases in total score compared to admission indicated improvement. Overall, CAFAS total scores averaged 81.05 at discharge. Discharge scores were higher for CHSWV (92.16) and lower for DePelchin (60.00) and Omni (67.76).

CAFAS Statistics: Comparison of Admission and Discharge

The following review of CAFAS statistics for the sample uses various indicators of change in functioning to illustrate improvement or decline in severity of child functioning issues from admission to discharge. These indicators include Severe Emotional Disturbance (SED), clinically significant change in total CAFAS score, and individual CAFAS domains. SED is used to identify youth who have been diagnosed with a severe behavioral, emotional, or mental health disorder due to a major impairment in child functioning lasting a year or longer (APA, 2000). CAFAS scores can be used to indicate SED based on a CAFAS total score greater than 40 and at least one domain rated 30, which is the highest level of severity for a particular domain (Hodges, 2005b). Using this definition, 73% of foster children had SED at admission and 58% of foster children had SED at discharge. These statistics indicate that 15% of the foster children in the sample had SED at admission but did not have SED at the time of discharge

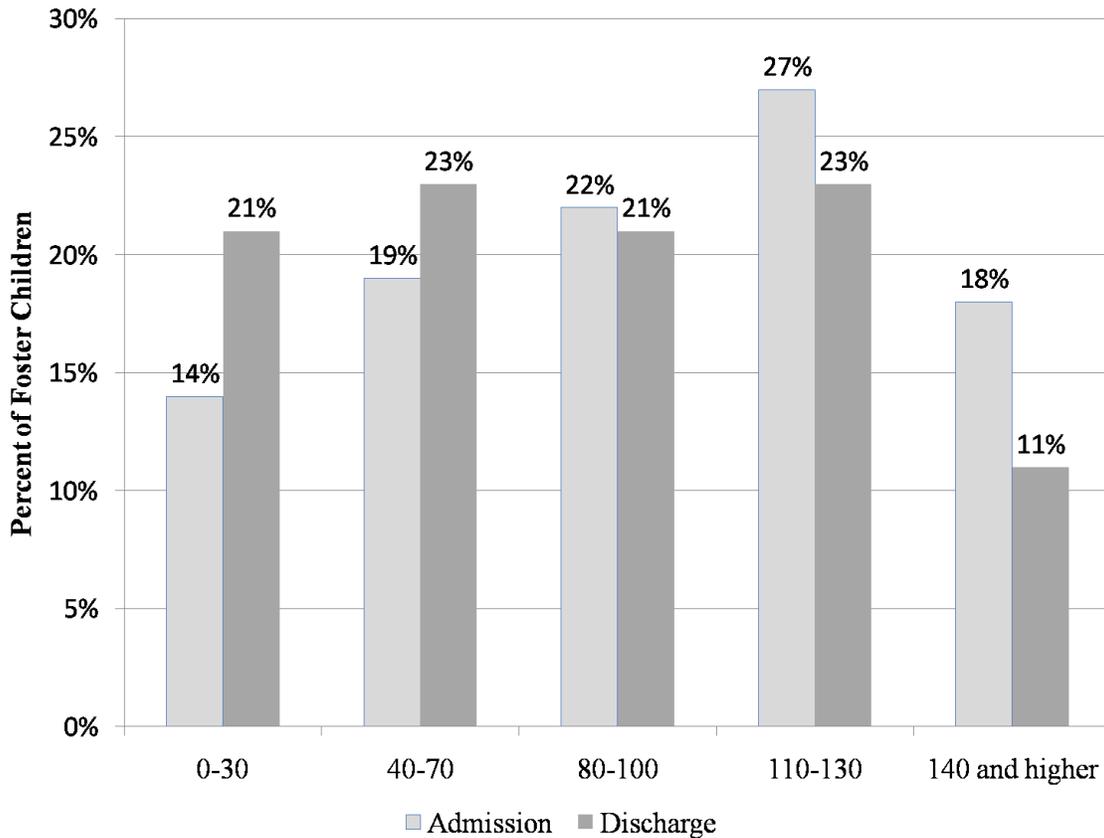
While any change in total CAFAS score would indicate a change in child functioning, previous studies have assessed the extent to which changes in CAFAS total scores represent clinically significant changes in functioning. Clinical significance has been considered equivalent to a reduction of at least 20 points in the CAFAS total score (Hodges, 2000; Hodges et al., 2004). However, one recent study found that for a population of children with SED, a 30 point change in CAFAS score appeared to be a better measure of change in functional impairment. However, it was noted that if children start with scores of 100 points or more, 20-30 points of change is not enough to reflect adequate levels of functioning (Roy, Roberts, Vernberg, & Randall, 2008). The following descriptive statistics will utilize a conservative definition of clinically significant change represented by a 30-point difference between admission and discharge total CAFAS scores.

To determine whether there was a clinically significant difference in child functioning between admission and discharge, average change in CAFAS total scores was examined. Generally, CAFAS total scores improved overall by approximately 13 points. While this statistic indicates improvement, the improvement would not be considered clinically significant. However, when the total scores were compared for each participating agency, Omni's data showed an improvement of 37 points, indicating that on average, Omni's foster children showed clinically significant improvement in child functioning. Alternatively, DePelchin (9 points) and CHSWV (7 points) foster children did not improve as dramatically. Based on a 30-point cut-off for clinical significance, Omni foster children alone improved to the extent that a clinically significant difference was attained. While further examination of these findings are beyond the scope of this study, the differences in improvement may partially be explained by the fact that Omni foster children were in care for an average of approximately one year longer than CHSWV children and six months longer than DePelchins children longer period of time.

In order to further examine improvement in child functioning while in care, Figure 5.1 categorizes CAFAS total scores by severity intervals and compares them from admission to discharge. Results indicate that the percentage of foster children with scores of 80 and above decreased from admission to discharge. Alternatively, higher percentages of foster children had CAFAS scores of 0 to 70 at discharge than at admission. These differences were most drastic for the lowest and highest severity intervals. Percentages of children with scores from 0 to 30 increased by approximately 7%, while the percentage of children with scores of 140 or more decreased by approximately 7%. The difference from admission to discharge in percentage of foster children at various severity intervals provides further evidence of improvement in child functioning from admission to discharge. While these results do not illustrate the clinical

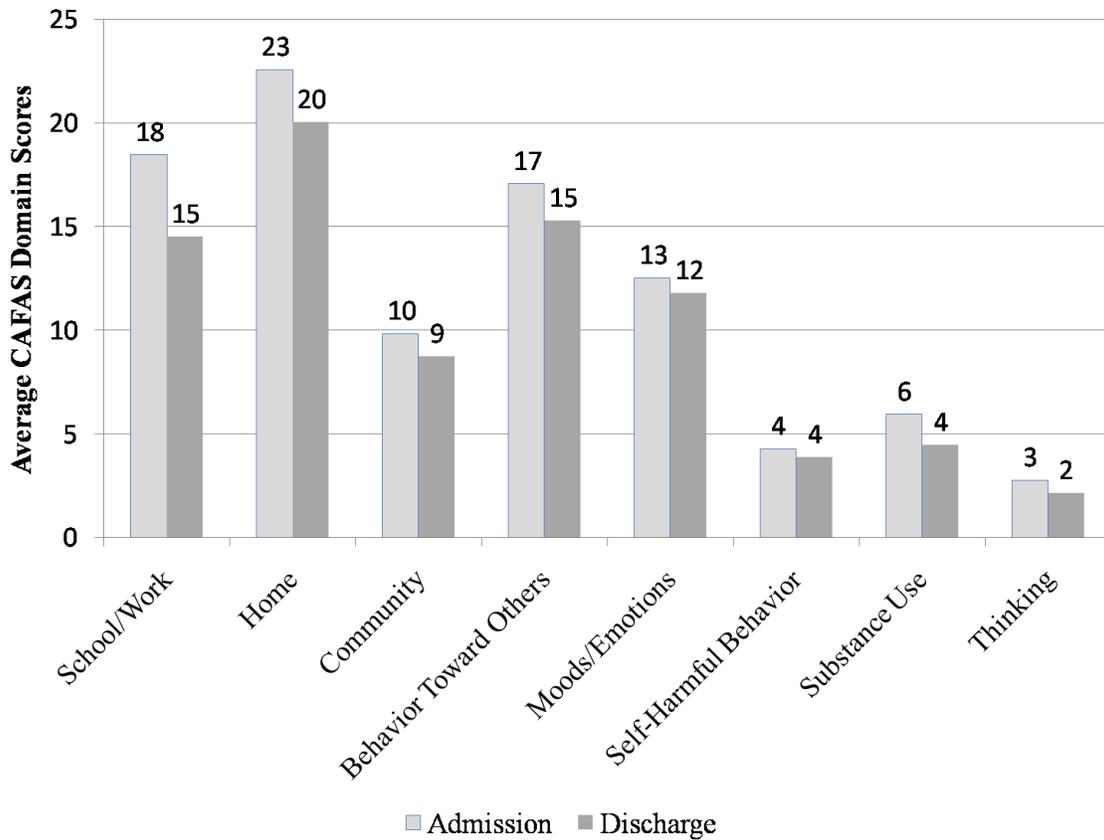
significance of the difference from admission to discharge, it does provide further evidence of improvement in child functioning for the sample while in agency care.

Figure 5.1. Severity Intervals for CAFAS Total Score



The individual domains of the CAFAS were also examined in order to determine the functional areas that showed the most impairment for sample foster children and to determine whether those changed from admission to discharge. As seen in Figure 5.2, average scores for each domain improved from admission to discharge. Though clinical significance does not apply to the individual CAFAS domains, results indicated more impairment in the domains of School/Work, Home, and Behavioral Toward Others at admission. Additionally, all of the domains showed similar improvement from admission to discharge, with average scores improving from .5 to 3 points.

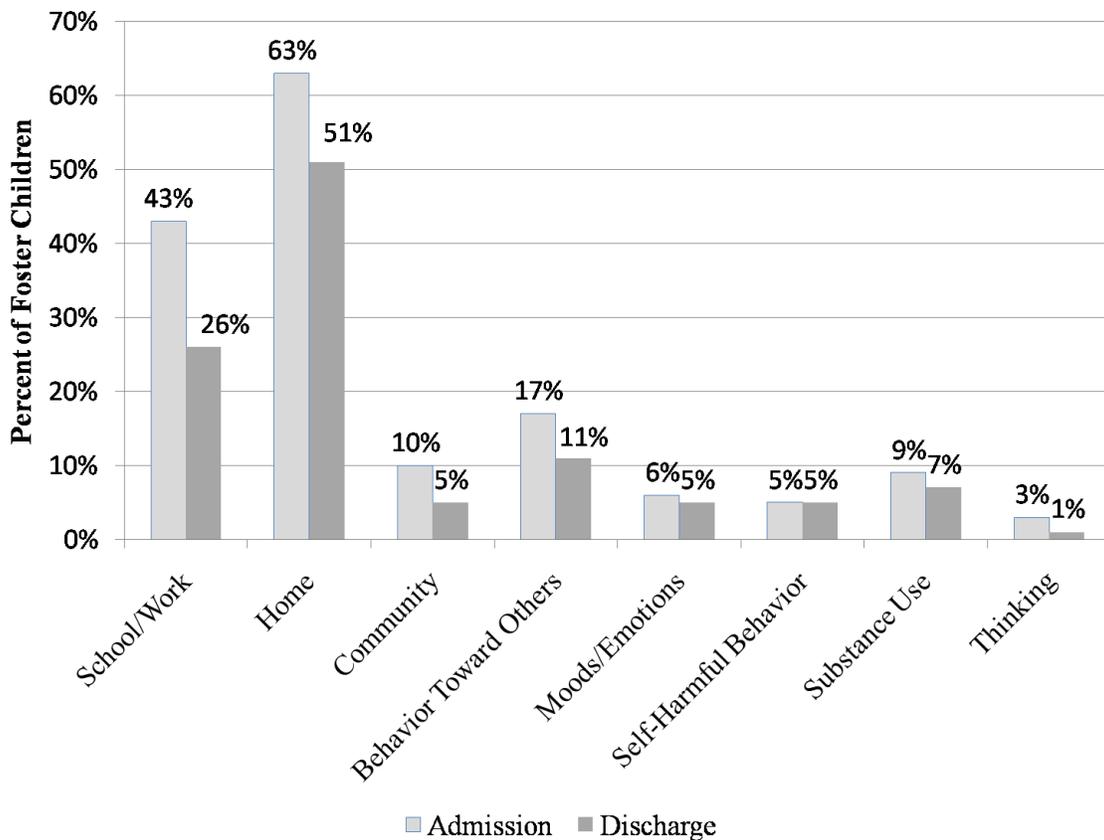
Figure 5.2. Average CAFAS Scores by CAFAS Domain



CAFAS data were also analyzed to determine the percentage of sample foster children who may have severe emotional or behavioral issues in a particular domain based on a severe rating (30 points) for that domain (Hodges, 2005b). At admission, 243 (73%) of the 333 foster children in the sample had at least one domain score of 30. By discharge, this number was down to 196 (59%). As seen in Figure 5.3, less than 20% of foster children had a severe rating for most of the domains at either admission or discharge. In fact, most of the foster children with a severe domain rating were severely impaired for the School/Work and Home domains. The percentage of foster children with a severe rating decreased for all domains from admission to discharge with the

exception of Self-Harmful Behavior, which increased slightly from 4.8% to 5.1%. Thus, a large percentage of foster children had a severe rating for at least one CAFAS domain, and most of these foster children were severely functionally impaired in the areas of School/Work and Home. Despite the high level of impairment for these children, 16% improved to the point that they no longer had severe functional impairment for any domain.

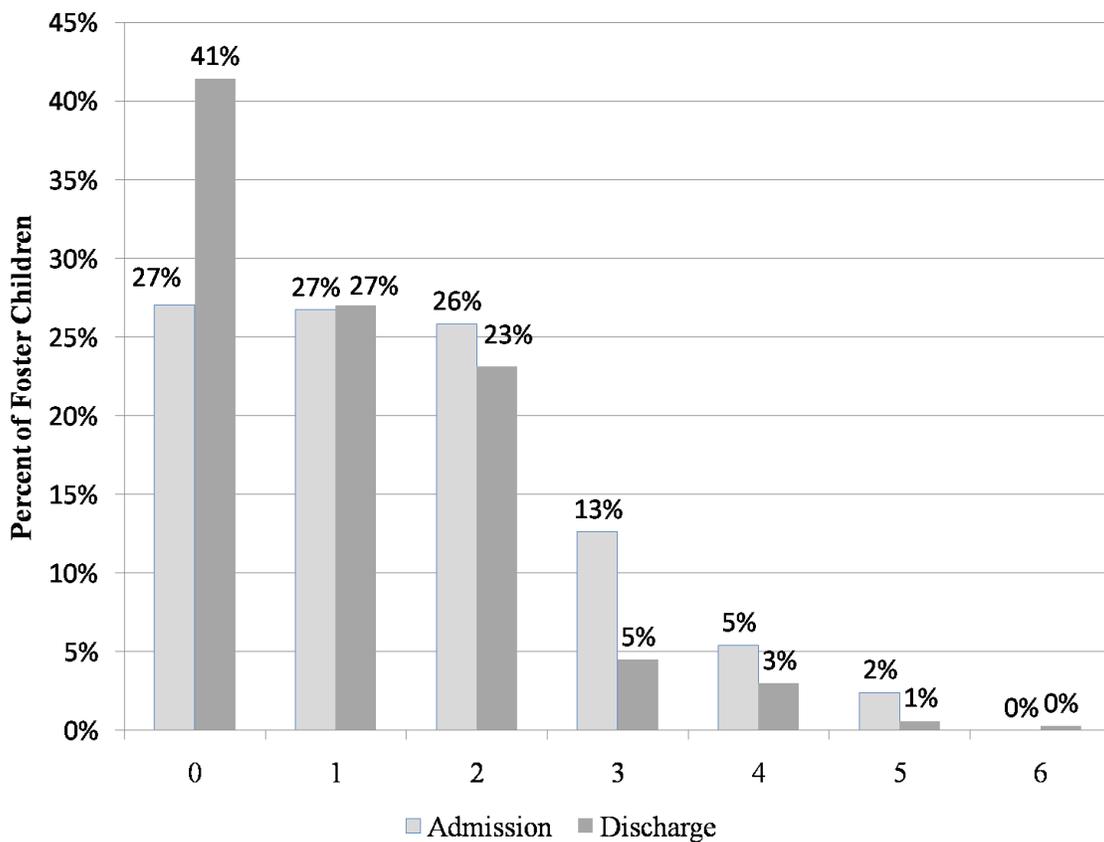
Figure 5.3. Severe Impairment for a Domain



Data for sample foster children were also analyzed based on the number of CAFAS domains with a severe rating (domain score of 30 points). A higher number of domains with a severe rating would indicate higher overall impairment in functioning. Figure 5.4 illustrates that at admission, most foster children (80%) had fewer than three

domains with a severe rating. However, given that a score of 30 on any one domain is indicative of severe impairment, the majority of sample foster children (73%) would still be considered severely impaired at admission. Comparatively, the number of foster children with no domains or one domain rated in the severe category (30 points) increased from admission to discharge, while the number of foster children with two or more domains rated as severe decreased from admission to discharge. This is another indication that despite severe functional impairment, improvement in functioning occurred from admission to discharge.

Figure 5.4. Number of CAFAS Domains with Severe Rating



Assessment-Level Descriptive Statistics

Dependent Variable: CAFAS Scores

The assessment-level dataset was used for model analysis and consisted of multiple records for each foster child, with one record for each assessment. Descriptive data were analyzed for the assessment-level dataset (N=1302) in order to examine information about the assessments themselves, including average CAFAS scores and ages of the foster children at the time of the assessment (Table 5.7). DePelchin contributed 329 of those records, while CHSWV contributed 773 and Omni contributed 200. Results indicated that total CAFAS scores ranged from 0 to 210, with a mean score of 81.66. Most assessments were completed either at admission (44%) or discharge (25%) and every foster child was required to have an admission and discharge assessment in order to participate in the study. Additionally, there were approximately 148 days (4-5 months) between each CAFAS assessment. Further, the average age at the time of the CAFAS assessment was 13.70 overall and ranged from 6 to 19 years of age. Average age for Omni and CHSWV was slightly higher (14.13 and 14.50 respectively) and slightly lower for DePelchin (11.53).

Table 5.7. CAFAS Assessment-Level Statistics

Agency (N)	Total CAFAS Scores	Age at CAFAS
Omni (200)	84.40	14.13
DePelchin (329)	56.81	11.53
CHSWV (773)	91.53	14.50
Total (1302)	81.66	13.70

The assessment-level dataset was also examined to illustrate the average scores for each domain (Table 5.8). For the eight individual CAFAS domains, scores ranged from 0 to 30. Overall scores were highest for School (15.31), Home (19.95), Behavior (15.55), and Emotions (11.85), and lower for Community (8.32), Self-Harm (3.68),

Substance Use (4.71), and Thinking (2.29). Across the agencies, scores for the individual domains were comparable, though CHSWV had an especially high average score for the Home domain (23.44) and DePelchin had especially low average scores for Community (2.80) and Substance Use (.24).

Table 5.8. CAFAS Domain Statistics

Agency (N)	School	Home	Com.	Beh.	Mood/ Emot.	Self- Harm	Subst. Use	Think
Omni (200)	16.40	18.00	9.00	15.95	11.75	4.70	4.35	4.25
DePelchin (329)	11.34	12.95	2.80	11.70	10.21	3.80	.24	3.77
CHSWV (773)	16.73	23.44	10.49	17.08	12.57	3.36	6.70	1.15
Total (1302)	15.31	19.95	8.32	15.55	11.85	3.68	4.71	2.29

Independent Variables

Frequencies of the independent variables (placement change, foster sibling presence, foster sibling removal, caseworker change, and caseworker contact) were examined in order to evaluate the experience of foster children in relation to these variables while in care. When the independent variables were examined, it was found that placement change, foster sibling removal, and caseworker change were positively skewed, with high frequencies of 0 responses. The following discussion reviews descriptive statistics for each of the independent variables.

Descriptive statistics for placement change were reviewed both with a definition that excluded temporary living conditions and a definition that included temporary living conditions. For placement change excluding and including temporary living conditions, 52.9% and 48.8% of the records had a value of 0, respectively. No placement change records were missing. Foster sibling presence had 13.2% of records with a value of 0 and no records in which the values were missing. Based on these results, most foster children lived with other foster children in their placements. Since the operational definition of foster sibling presence included counts of foster siblings regardless of placement type,

reports of high numbers of foster siblings may have be indicative of placement in residential treatment centers, high rates of placement change, or both.

A large number of records used in the model analysis indicated no foster sibling removals. In fact, the frequency of foster sibling removal was 0 for 83.0% of the records and there were no missing values for this variable. Similarly, for caseworker change, approximately half (56.5%) of records indicated that no caseworker change occurred between admission and the given assessment. Additionally, 6.4% of the records contained no information about caseworker change. The records with missing values were those in which no record of any caseworker assignment to a child was available.

Descriptive results indicated no caseworker contacts for 8.9% of the records and missing for 16.1% of the records. For this variable, the records with missing values were those in which no caseworker contacts were documented for the foster child as opposed to values of 0, in which some caseworker contacts were documented but no face to face contacts were documented. Additionally, the rate of caseworker contact per month was calculated and any values indicating that the child was seen less than once per month were given a value of 0 as well.

Based on these findings, the independent variables were the transformed into dichotomous variables to compensate for their skewed nature. Specifically, the continuous independent variables were changed such that a 0 represented no change between admission and the assessment date and 1 represented at least one change between admission and the assessment date. Thus, results of the model using the dichotomous version of the independent variables will indicate whether any change at all may be relevant to child functioning as opposed to the amount of change.

CORRELATIONS

Pearson's correlations were analyzed for all variables included in the model for descriptive purposes in order to examine the relationship between each of the independent variables and total CAFAS score. In other words, is there an association between the independent variables: placement change, foster sibling presence, foster sibling removal, caseworker change, caseworker contact, and the dependent variable, child functioning? All of the correlations across the models were small or medium in strength, using Cohen's (1988) benchmarks of $r = .10$ as small, $r = .30$ as medium, and $r = .50$ as indicative of a large effect.

As seen in Table 5.9, correlations of medium strength were found for each of the independent variables and the CAFAS total score, with the exception of caseworker change, which had a small and non-significant correlation. Placement change was significantly correlated with foster sibling presence (.25), caseworker change (.49) and caseworker contacts (.36). Additional correlations that were medium in strength were found between foster sibling removal from placement and caseworker contacts (.20), foster sibling presence and caseworker change (.13), and caseworker change and caseworker contacts (.21).

Table 5.9. Pearson's Correlations for the Independent Variables and CAFAS Total Score

	CAFAS Total Score	Placement Change	Foster Sibling Removal	Foster Sibling Presence	Caseworker Change	Caseworker Contacts
CAFAS Total Score	1.00	.17**	-.32**	.29**	.01	-.16**
Placement Change	.17**	1.00	.03	.25**	.49**	.36**
Foster Sibling Removal	-.32**	.03	1.00	-.02	.01	.20**
Foster Sibling Presence	.29**	.25**	-.02	1.00	.13**	-.06*
Caseworker Change	.01	.49**	.01	.13**	1.00	.21**
Caseworker Contacts	-.16**	.36**	.20**	-.06*	.21**	1.00

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

ASSUMPTIONS

Growth curve analysis requires that the assumptions of normality, linearity, residual error, and homoscedasticity are met. Each of these assumptions is reviewed in turn. Additionally, the results of the tests required determine whether the assumptions are met are discussed.

Assumption of Linearity

The relationship between the dependent (total CAFAS score) and independent variables (placement change, foster sibling presence, foster sibling removal, caseworker change and caseworker contact) can only be accurately estimated using GCA if the relationship is linear in nature. One method of determining linearity, visual observation, lacked clarity because of the dichotomous nature of the independent variables. Therefore, linearity between the dependent and independent variables was assessed by

examining the correlation between the dependent variable and each of the independent variables. Results indicate that the correlation between the CAFAS total score and each of the independent variables was significant and moderate in strength, indicating a linear relationship. However, the correlation between total CAFAS score and caseworker change was weak and not statistically significant. Since this variable is dichotomous, transformations are not possible. Thus, the assumption of linearity is met for the other independent variables, but not for caseworker change. This indicates that the analysis will underestimate the presence and strength of the relationship between total CAFAS score and caseworker change.

Assumption of Normality

The assessment-level dataset that was used for analysis contains multiple records per foster child. Each record represents a distinct CAFAS assessment, and for inclusion each youth must have had at least three CAFAS assessments. The dependent variable is the CAFAS total score. It was decided that the independent variables would be calculated based on changes occurring from entry to the time of the CAFAS assessment. In this way, changes that occurred after the given CAFAS administration were ignored, but the cumulative effects of changes that occurred prior to the CAFAS administration would be taken into account. The resulting continuous independent variables were analyzed for normality and outliers.

There is conflict among statisticians as to guidelines for normality in GCM, evaluated in by measures of skewness and kurtosis. However, these measures can be assessed by comparing the statistic and its standard error; the statistic should be larger than twice the standard error (Kline, 1988). Skewness and kurtosis measures were applied to the assessment-level dataset. Limits for skewness and kurtosis are different for complex models such as GCM, in which skewness is considered acceptable with an

absolute value of less than 3 and kurtosis is considered acceptable with an absolute value less than 20 (Kline, 1988).

For all variables used in the model, skewness and kurtosis were within acceptable ranges (Table 5.10). These included the total CAFAS score, the control variables (time, age at assessment, gender, and race). Race is a categorical variable and thus was altered to Caucasian-American/non-Caucasian American for the purposes of these analyses. Additionally, neither skewness nor kurtosis were an issue for the dichotomized version of the independent variables.

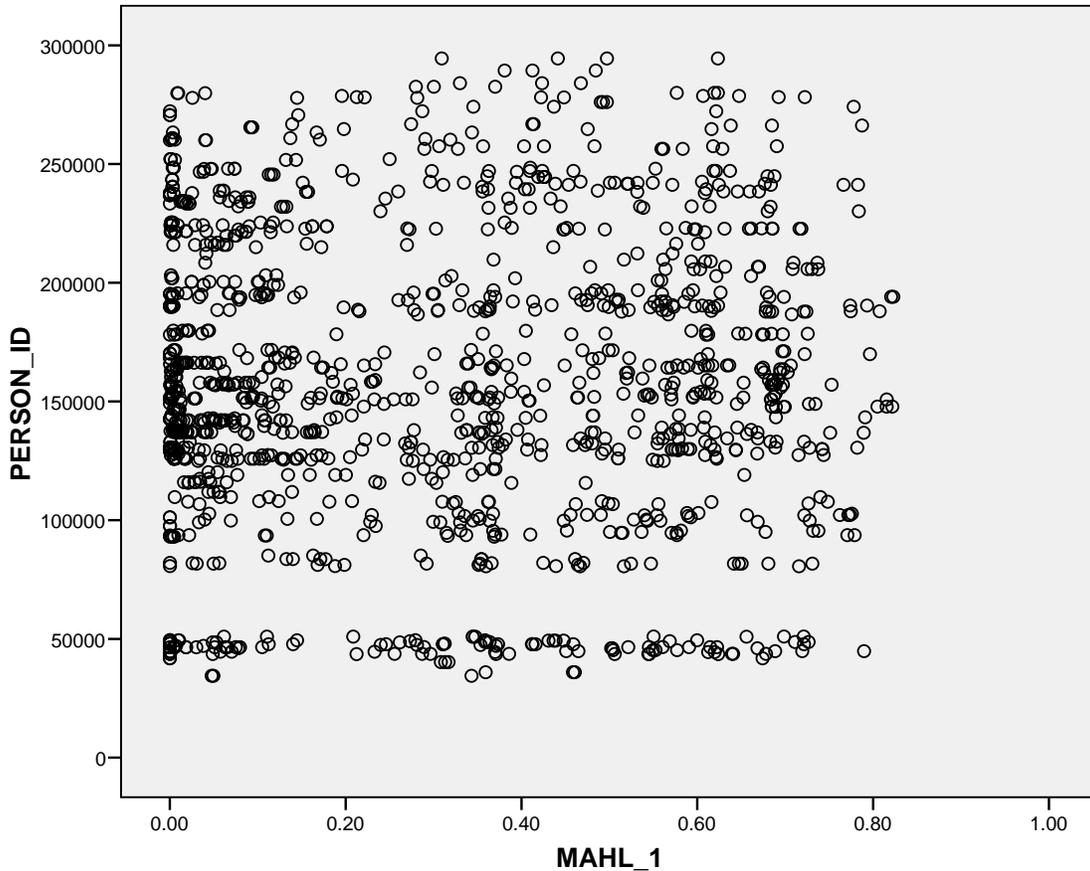
Table 5.10. Skewness and Kurtosis

Variable Name	Mean	Standard Deviation	Variance	Skewness	Kurtosis
Total CAFAS Score	81.66	45.946	2111.004	0.050	-0.813
Age at Assessment (Months)	170.28	34.296	1176.223	-0.820	-0.182
Admission to CAFAS (Months)	8.04	9.826	96.541	1.584	2.315
Gender	0.46	0.499	0.249	0.164	-1.976
Caucasian-American/Non	0.72	0.45	0.203	-.962	-1.076
Placement Change Excluding Temporary Living Conditions	0.47	0.499	0.249	0.117	-1.989
Placement Change Including Temporary Living Conditions	0.51	0.500	0.250	-0.046	-2.001
Foster Sibling Removal	0.17	0.376	0.141	1.762	1.105
Foster Sibling Presence	0.87	0.339	0.115	-2.176	2.737
Caseworker Change	0.40	0.489	0.239	0.425	-1.822
Caseworker Contact	0.84	0.368	0.135	-1.844	1.402

Regression analyses were performed in order to detect the presence of potential outliers by calculating Mahalanobis' Distance. The regression procedure to calculate Mahalanobis' Distance was run with mean replacement rather than case-wise deletion so that all cases were included in my diagnostics. The regression model was not used for inferential analyses, but simply for outlier detection. Cases with the values that indicated the most divergence from average values were reviewed for data errors. Upon review, it was found that the data available for these records accurately depicted the case history

and thus were left in the dataset. The cases with values that diverged the most from average values were the same across all four models. The outlier analysis for the model is depicted in Figure 5.5.

Figure 5.5. Outlier Analysis

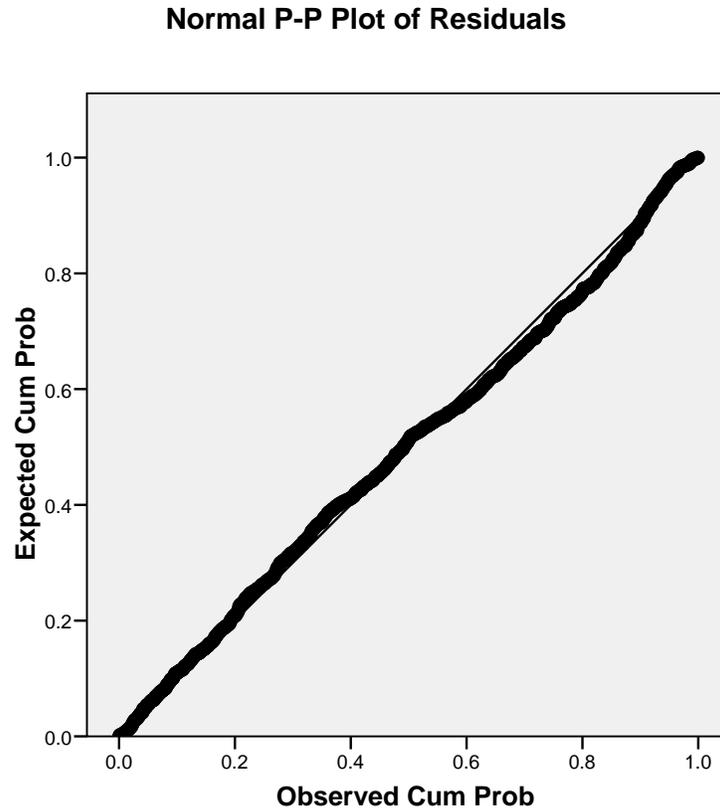


Assumption of Residual Error

The normality of the model itself was tested to assess the distribution of residual error. The assumption of normally distributed residual error was visually tested by creating a normal probability plot using observed cumulative and expected normal probabilities of occurrence of the standardized residuals. Figure 5.6 displays 45 degree linear pattern, illustrating that the observed values conform to those that would be

expected and that the variance of the residual errors is constant. Thus, we can assume that the assumption of normally distributed residual error is met.

Figure 5.6. Assumption of Residual Error

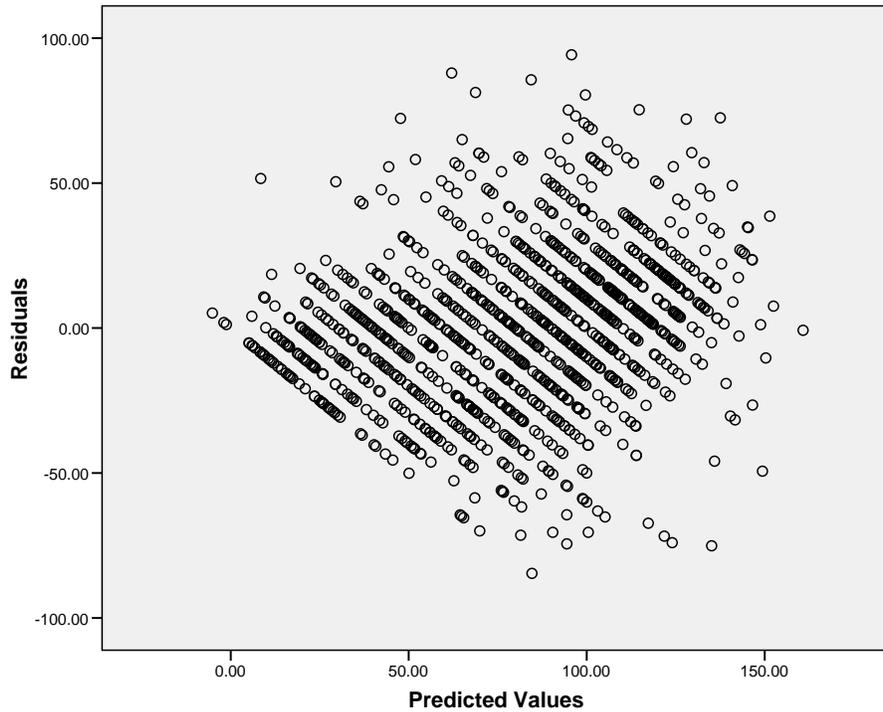


Assumption of Homoscedasticity

The model was tested in order to assure that the assumption that the variance of the residuals is homogeneous across predicted values of the dependent variable was met. In order to visually test the models for the assumption of homoscedasticity, the predicted and residual values were plotted for each of the models. The scatterplot was visually analyzed to ensure that the values showed a random pattern, with no funnels or other

shapes visually apparent. The model depicted homoscedasticity visually. Figure 5.7 depicts the model, illustrating that the values are not heteroscedastic.

Figure 5.7. Assumption of Homoscedasticity



GROWTH CURVE ANALYSIS

The GCA model was analyzed using a dichotomous version of the independent variables and a definition of placement change that included temporary living conditions. Results related to the overall model are presented, followed by results for the control variables and the independent variables. When calculated, the CAFAS total score is additive with higher CAFAS scores indicating more functional impairment and lower scores indicating less impairment. For simplicity, the directionality of results in Table 5.11 has been reversed to more clearly indicate whether a relationship was found to be positive or negative.

Table 5.11. GCA Model Results

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	-54.12	10.35	324.94	-5.23	<.001
Age	-0.18	0.06	292.92	-3.14	.002
Gender	8.30	3.71	272.30	2.24	.026
African-American	-7.27	5.33	277.37	-1.37	.173
Hispanic/Latino-American	14.79	11.82	272.15	1.25	.212
Other-American	13.89	5.84	270.78	2.38	.018
Time	0.38	0.14	1178.57	2.69	.007
Placement Change	-8.80	2.93	1178.22	-3.00	.003
Foster Sibling Removal	16.67	3.48	1181.09	4.79	<.001
Foster Sibling Presence	-17.27	4.50	829.65	-3.83	<.001
Caseworker Change	10.32	2.88	1206.45	3.58	<.001
Caseworker Contacts	8.78	3.15	1131.44	2.79	.005

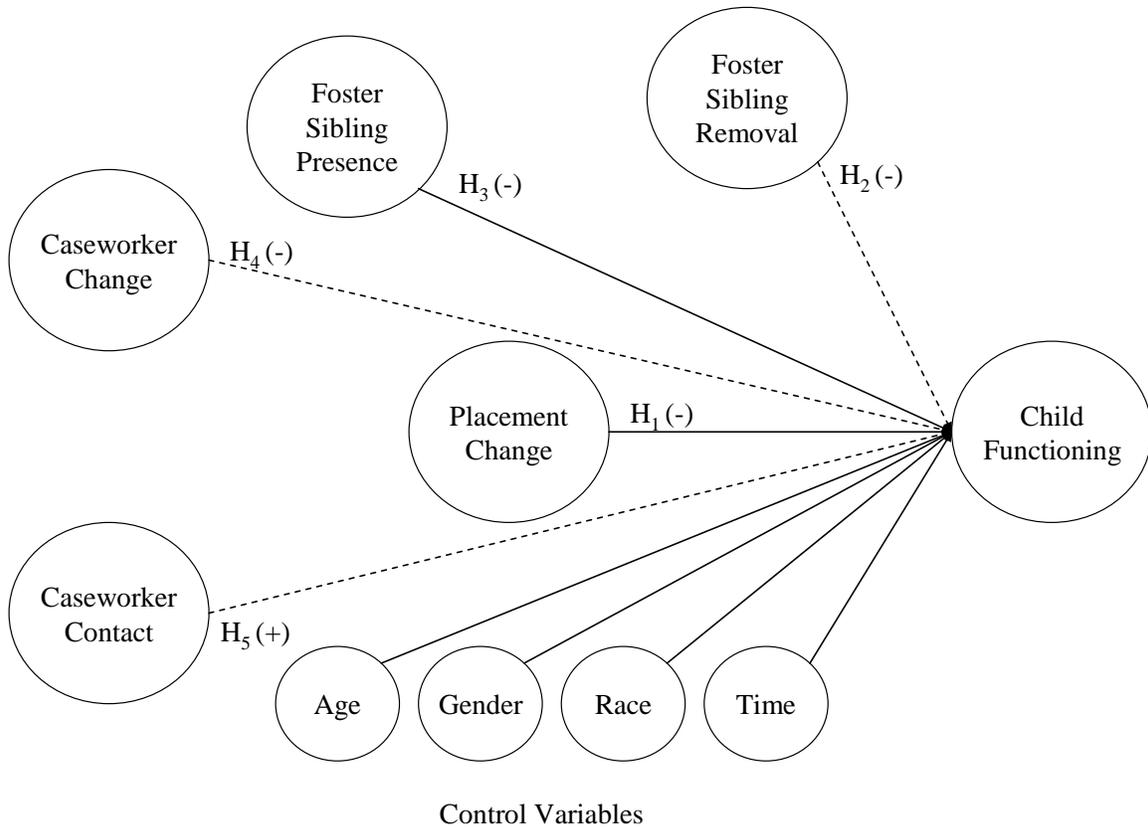
In the model, the time variable was linear and the intercept, representing the value of the CAFAS total score where all other variables are zero, was the only random variable. Results indicate that the CAFAS score was approximately 54 across foster children at admission, with a significant Wald Z value of 20.92. Results comparing a model with no predictors to the model with predictors indicated that the independent variables explain approximately 31.33% of the variance in the CAFAS total score.

Results for the control variables indicated that all variables were significant. Specifically, CAFAS scores improved by approximately .38 points for each month in care ($t(1178.57) = 2.69$; $p = .007$). Additionally, CAFAS scores were approximately 8 points worse for males than for females ($t(272.30) = 2.24$; $p = .026$) and functioning scores deteriorated by approximately .18 points for each monthly increase in child age at the time of assessment ($t(292.92) = -3.14$; $p = .002$). Results for race compared Caucasian-American foster children to children of each other race, and indicated that CAFAS scores for foster children of races other than African-American and Hispanic/Latino-American were approximately 14 points better than those of Caucasian-American foster children

($t(270.78) = 2.38; p=.018$). Results comparing African-American and Hispanic/Latino-American foster children with Caucasian-American foster children indicated that the groups were not significant.

Based on the GCA model (Figure 5.8), results for the independent variables were analyzed in relation to the total CAFAS score. Placement change, foster sibling presence, foster sibling removal, caseworker change, and caseworker contact were analyzed to determine the relative direction of their relationship with child functioning and their effect on child functioning. Directionally, a positive association (+) between an independent variable and child functioning would indicate improved child functioning in relation to the independent variable, while a negative relationship (-) would indicate declines in child functioning. Findings indicated that all variables were significant and in the expected direction, with the exception of caseworker change and foster sibling removal, which were significant but in an unexpected direction.

Figure 5.8. Illustration of the GCA Model



Hypothesis 1 (H₁): There is a negative relationship between placement change and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of foster sibling presence, foster sibling removal, caseworker change, and caseworker contact.

In the model, an inclusive operational definition of placement change was utilized that encompassed all changes in a child's living conditions. Thus, temporary living conditions that are sometimes not counted, such as respite care and hospitalization, were included. Results indicated that CAFAS scores declined by approximately 9 points if

placement change occurred between the child's admission into agency care and the assessment date ($t(1178.22) = -3.00; p=.003$).

Hypothesis 2 (H₂): There is a negative relationship between foster sibling removal and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling presence, caseworker change, and caseworker contact.

Based on the definition used for the GCA model, foster sibling removal is indicated when at least one foster sibling is removed from a foster child's placement during the time between admission and the CAFAS assessment. It was hypothesized that foster sibling removal would be negatively associated with child functioning. However, results indicated a positive association between foster care removal and child functioning. When at least one foster sibling was removed from placement, CAFAS scores improved by approximately 17 points ($t(1181.09) = 4.79; p<.001$).

Hypothesis 3 (H₃): There is a negative relationship between foster sibling presence and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling removal, caseworker change, and caseworker contact.

Foster sibling presence was defined as the presence of any other foster child in a placement between admission and CAFAS assessment. Based on the model, it was expected that foster sibling presence would be associated with a decline in child functioning. In fact, CAFAS scores deteriorated by about 17 points if a foster sibling was in the home when the child was placed ($t(829.65) = -3.83; p<.001$).

Hypothesis 4 (H₄): There is a negative relationship between caseworker change and child functioning after controlling for the effects of time, age, gender, and race, and

accounting for the effects of placement change, foster sibling presence, foster sibling removal, and caseworker contact.

For the model, caseworker change was operationally defined as the removal of the child from a caseworker's caseload. This includes any change that occurred between the time of admission and CAFAS assessment. Based on the conceptual model, a negative relationship between caseworker change and child functioning was expected. However, results indicated that caseworker change improved CAFAS scores by approximately 10 points ($t(1206.45) = 3.58; p < .001$).

Hypothesis 5 (H₅): There is a positive relationship between caseworker contact and child functioning after controlling for the effects of time, age, gender, and race, and accounting for the effects of placement change, foster sibling presence, foster sibling removal, and caseworker change.

Caseworker contact was indicated if any caseworker completed a face to face contact with the child between admission and CAFAS assessment. It was hypothesized that caseworker contact would be positively associated with child functioning. In fact, caseworker contact improved CAFAS scores by about 9 points if there was at least one face to face contact ($t(1131.44) = 2.79; p = .005$).

EXPLORATORY ANALYSES

Further exploratory analyses were conducted in order to investigate the possibility of interactions between time and the independent variables, explore alternative explanations for results that were contrary to research hypotheses, consider the potential effects of varying definitions of the independent variables, examine the effect of the independent variables on each CAFAS domain, and review results for each individual agency. First, interactions between the independent variables and time were examined to establish whether these could be affecting the model. Next, the model was analyzed

using different definitions of the independent variables by utilizing continuous versions of the independent variables rather than dichotomous versions. Additionally, in order to explore the effect of using a more stringent definition of placement change on the model, the model was run using a definition of placement change that excluded temporary living conditions. Potential alternative explanations for the results that were contrary to the research hypotheses were also explored. Finally, the model was run using each CAFAS domain as the dependent variable and for agency individually.

Interactions with Time

In order to establish whether interactions with time were occurring within the model, the model was run for each independent variable, including an interaction with time and the given independent variable. The interactions were analyzed to examine whether they were constant across time. For example, a significant interaction between time and placement change would indicate that longer periods in foster care were associated with higher rates of placements. None of the independent variable interactions with time were significant and thus none were included in the model. The individual contribution of each variable was also explored.

Variables in an Unexpected Direction

Further analyses were conducted in order to explore results of the GCA models. Specifically, the model was run separately for each agency, each race, and each of the eight CAFAS domains. Additionally, results related to caseworker change and foster sibling removal were explored due to their unexpected relationship with total CAFAS score. It was originally hypothesized that both caseworker change and foster sibling removal would be negatively associated with child functioning. Specifically, it was expected that higher levels of caseworker change and foster sibling removal would result

in higher CAFAS scores. However, these relationships were both in the opposite direction. Thus, further analyses were conducted to explore the potential reasons for these discrepancies.

Cases where CAFAS scores decreased over time were examined to evaluate whether caseworker changes were associated with these decreases. Despite a weak (.077) correlation between total CAFAS score and caseworker change, there may still be a relationship between these two variables that is masked by the continuous nature of the variables. In order to explore this relationship, CAFAS scores were categorized based on the change in score since the last assessment into improved, declined, and no change in functioning. Caseworker changes were also categorized based on changes since the last assessment into no changes and at least one caseworker change.

Using a chi-square analysis, it was found that there was a significant difference between cases in which a CAFAS scores did not change and CAFAS scores that either improved or declined (Table 5.12). Among cases where there was a change in CAFAS score since the last assessment, approximately 30% experienced at least one caseworker change. Interestingly, among cases where there was no change in CAFAS score, only approximately 7% experienced a caseworker change. These results indicate that there may be an interesting relationship between caseworker change and CAFAS score in that no caseworker changes may stabilize child functioning, while caseworker changes may either improve or decrease child functioning. This finding may point to the presence of other unknown factors, such as quality of the caseworker-child relationship that may cause caseworker changes to either positively or negatively influence child functioning.

Table 5.12. Caseworker Change and CAFAS Change

Change Since Last CAFAS Assessment	Caseworker Change		Total (%)
	No	Yes	
Improvement in Functioning (N)	280	126	406 (31.2%)
% Change	69.0%	31.0%	
Adjusted Residual	-5.8	5.8	
No Change (N)	501	39	540 (41.5%)
% Change	92.8%	7.2%	
Adjusted Residual	10.4	-10.4	
Decline in Functioning (N)	245	111	356 (27.3%)
% Change	68.8%	31.2%	
Adjusted Residual	-5.4	5.4	
Total (%)	1026 (78.8%)	276 (21.2%)	1302 (100%)

A moderate correlation (-.30) was found between CAFAS total score and foster sibling removal. Using a similar technique, CAFAS total score was categorized into improvement, decline, and no change since the last assessment, while foster sibling removal was categorized into no siblings removed and at least one sibling removed since the last assessment. Similar results were found to those of caseworker change, in that CAFAS changes due to either improvements or declines child functioning were preceded by foster sibling removal in approximately 11%-13% of the cases (Table 5.13). For cases in which there was no change in CAFAS total score since the last assessment, foster siblings were removed in only about 6% of the cases. Again, these results could point to another unknown variable that may be mediating the relationship between foster sibling removal and child functioning, such as the quality of the relationship between the foster child and the foster sibling.

Table 5.13. Foster Sibling Removal and CAFAS Change

Change Since Last CAFAS Assessment	Foster Sibling Removal		Total (%)
	No	Yes	
Improvement in Functioning (N)	353	53	406 (31.2%)
% Change	86.9%	13.1%	
Adjusted Residual	-2.8	2.8	
No Change (N)	506	34	540 (41.5%)
% Change	93.7%	6.3%	
Adjusted Residual	3.5	-3.5	
Decline in Functioning (N)	317	39	356 (27.3%)
% Change	89.0%	11.0%	
Adjusted Residual	-1.0	1.0	
Total (%)	1176 (90.3%)	126 (9.7%)	1302 (100%)

Continuous Versions of the Independent Variables

Continuous versions of the independent variables were used in an exploratory model to determine whether each change affected CAFAS total score significantly, as opposed to the dichotomous versions of the independent variables, which indicated that any change affected CAFAS total score significantly. Results for the model indicated that the CAFAS score was approximately 51 across foster children at admission, with a significant Wald Z value of 8.8. Results indicated that the independent and control variables explain approximately 28.49% of the variance in the CAFAS total score. Though none of the other independent variables were significant, the number of foster children present in the home was associated with a significant deterioration of CAFAS scores by approximately 1 point for every additional foster sibling. Additionally, for each caseworker contact, CAFAS scores improved by approximately .3 points. Appendix C provides detailed results for this analysis.

Placement Change Excluding Temporary Living Conditions

In order to explore whether a more stringent definition of placement change that excluded temporary living conditions would provide a model with a better fit for the data, the model was analyzed using this revised definition of placement change. Results indicated that the CAFAS total score was approximately 54 across foster children at admission, with a significant Wald Z value of approximately 8.9. Results indicated that the independent variables explained approximately 29.88% of the variance in the CAFAS total score when temporary living conditions were excluded.

All independent variables remained significant in this model. Compared to a model using a definition of placement change that included temporary living conditions, results were similar. However, when temporary living conditions were excluded, child functioning scores significantly deteriorated by approximately 6.6 points if a placement changed, while the total score declined by 8.8 when temporary living conditions were included. Appendix D contains detailed information on this exploratory analysis.

Individual Domains

In order to further explore the unexpected relationships between caseworker change and foster sibling removal with the independent variable, CAFAS total score, growth curve analyses were run for the individual CAFAS domains. For the most part, analysis using the individual CAFAS domains as the dependent variable did not illuminate these issues. For the School/Work domain, the model was no longer significant for foster sibling removal, placement change, gender, race, and age. There was no change from the model using CAFAS total score when it was run using the Home domain as the dependent variable, except that time was no longer significant. Similarly, there was no change for the Community domain, except that race, caseworker contact, and placement change were no longer significant. For the Behavior Toward Others

domain, age, time, and caseworker contact were not significant. However, on this domain CAFAS scores for African-Americans were significantly worse by 2.5 points compared to scores for Caucasian-Americans. When the model was run using the Moods/Emotions domain, age, gender, race, foster sibling removal, and caseworker contact were not significant. When Self-Harmful Behavior was used, none of the variables were significant except the intercept. Similarly, nothing was significant for Substance Use except age, gender, and caseworker contact. Finally, nothing was significant for Thinking except age.

Thus, the results of the analysis of the individual CAFAS domains as dependent variables did not help to explain the reason caseworker change and foster sibling removal were negatively related to CAFAS total score. Caseworker change was significant throughout most of the domain-level analyses, though the estimates indicated that each caseworker change resulted in less of an improvement in domain scores than in the total CAFAS score. This is to be expected, as the total potential range of scores per domain is 0 to 30, while the range for the overall total CAFAS score is 0-240. While foster sibling removal remained significant for the Home, Community, and Behavior Toward Others domains, it did not remain significant for the other domains. Further, the removal of at least one foster sibling from a foster child's placement results in less of an improvement in domain scores than in the total CAFAS score. See Appendix E for detailed GCA results for each CAFAS domain.

Individual Agencies

The model was run for each agency individually to determine whether the strength of results from one agency might be masking relationships the overall results. The Omni model indicated that none of the independent variables were significant with the exception of race, time and the intercept. Results for race indicated that children of

races other than Caucasian-American, African-American, and Hispanic/Latino-American scored approximately 49 points better than Caucasian-American foster children. For DePelchin, the intercept, foster sibling presence, and caseworker contact were significant in the model. Additionally, there was a significant difference between CAFAS scores for African-American foster children and Caucasian-American foster children in that African-Americans scored approximately 30 points worse. For CHSWV, most independent variables showed results similar to that of the model including all three agencies, except that the intercept and gender were no longer significant. Additionally, CAFAS scores for Hispanic/Latino-American and foster children of races other than Caucasian-American and African-American no longer differed significantly from those of Caucasian-Americans.

The intercept estimate for Omni and DePelchin indicated more increase in total score per change than that of the model including all three agencies. Additionally, the estimate for foster sibling removal increased more drastically for each change for CHSWV than the model. Finally, the estimate for foster sibling presence increased more drastically in the CHSWV and DePelchin models than the model including all three agencies. See Appendix F for detailed GCA results for each participating agency.

Chapter 6: Discussion

An overarching goal of this dissertation was to examine the effects of foster care system involvement on foster children through various types of changes in environments and relationships that occur during their time in foster care. The specific aims of this study were to evaluate the effects of placement change, caseworker change, foster sibling removal, foster sibling presence, and caseworker contact on foster child functioning as assessed using the Child and Adolescent Functional Assessment Scale (CAFAS[®]). The selection of these particular factors was an outgrowth of the theoretical framework for the study and previous research on foster care system influences on child outcomes.

General Systems Theory was used as a conceptual framework through which foster care system effects on foster children could be analyzed. This theoretical model considered the foster care system and the policies that guide caseworker decisions at the macro level of the hierarchy. While these factors may not directly influence child outcomes, their indirect effects may affect foster child functioning. At the mezzo level, Family Systems Theory was used to explore the relationships that may impact foster children through the overall nature and quality of the relationship. Attachment Theory was used at the micro level of the hierarchy to illustrate how the volatile nature of the foster care system may impact foster child functioning by disrupting those relationships. Foster children enter care with serious challenges to attachment due to maltreatment and removal from their biological families. Changes experienced while in foster care may result in further challenges to attachment when relationships to people with whom the child might attach are removed.

Within this conceptual framework, previous research revealed specific factors related to changes in environments and relationships that may affect child outcomes.

Growth curve analysis (GCA) was then used to examine the relationship between these factors and child functioning among a group of foster children receiving Treatment Foster Care services. This discussion will present a summary of the findings from growth curve analyses (GCA) related to each hypothesis, review findings from exploratory analyses, assess the limitations of the study, review implications for the field using the study's theoretical framework, and provide directions for future research.

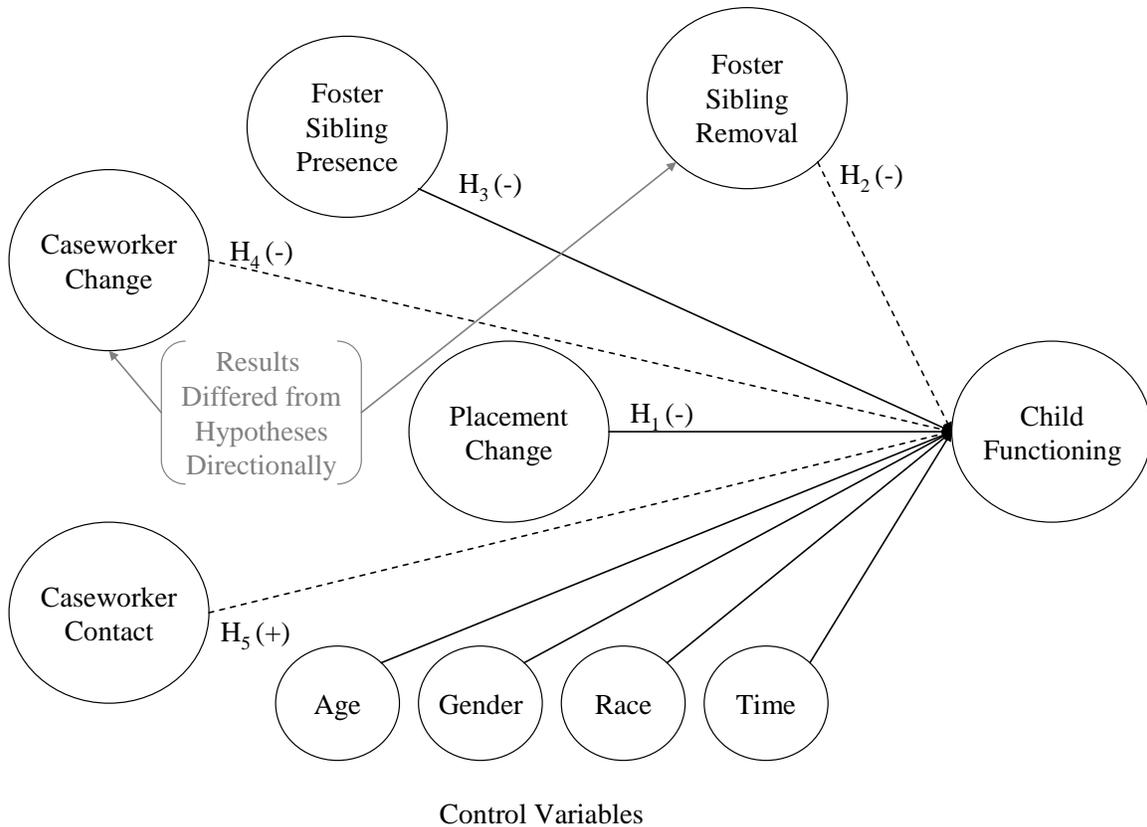
DISCUSSION OF RESULTS

The overall results of this study support the notion that changes that occur during foster care affect foster child functioning. The initial hypothesis was that there is a negative association between severed relationships (placement change, caseworker change, and foster sibling removal), foster sibling presence, and child functioning (CAFAS). Additionally, it was hypothesized that continuity in relationships (caseworker contact) positively impacts foster child functioning.

GCA Model

Growth curve analysis (GCA) was used to examine these relationships and their relative importance to child functioning. As seen in Figure 6.1, findings supported some hypotheses, indicating a negative association (-) between placement change and the number of foster children in the home with child functioning and a positive association (+) between caseworker contact and child functioning. However, other results were contrary to study hypotheses and indicated a positive relationship between caseworker change and foster sibling removal with child functioning.

Figure 6.1: Results of the GCA Model



Hypotheses

GCA was used to test specific hypothesis involving the independent variables. The GCA model controlled for the effects of time, age, gender and race in relation to each of the hypotheses. Additionally, GCA accounted for the other independent variables when testing the relationship between a particular independent variable and child functioning. Directionally, hypotheses were stated based on the independent variable’s association with improved child functioning. Thus, a negative association between an independent variable and child functioning would indicate that the presence of the independent variable was associated with declines in child functioning while a positive

association would indicate an association with improvement in functioning. Each of the five hypotheses for this research will be reviewed in turn based on the results from the GCA model analysis and with further explanatory discussion of the findings.

Hypothesis 1 (H_1) addressed the relationship between placement change and child functioning, expecting a negative relationship between the two variables in that placement change would be associated with declines in child functioning. In fact, a negative relationship was found between placement change and child functioning after accounting for the effects of the control variables and other independent variables. Specifically, CAFAS total scores deteriorated in relation to placement change. Using the definition of placement change that included temporary living conditions, the CAFAS total score declined by approximately nine points if a placement change occurred.

Hypothesis 2 (H_2) was concerned with the relationship between foster sibling removal and foster child functioning, anticipating a negative relationship such that foster sibling removal would be associated with declines in child functioning. Indeed, foster sibling removal from placement was significant in the model, but there was a positive relationship between the two variables. In fact, a removal actually improved child functioning scores by approximately 17 points. Further exploration of this variable indicated that a complex relationship between foster sibling removal and child functioning may be occurring. It was found that when CAFAS scores did not change, foster sibling removal often had not changed either. However, regardless of whether CAFAS scores improved or declined, at least one foster sibling removal was likely to have occurred. Although these results do not point to a reason for the directionality of the relationship between foster sibling removal and child functioning, they may indicate the presence of one or more other variables, such as the quality of the relationship between the foster child and their foster sibling that could be mediating the relationship

between foster sibling removal and child functioning. The quality of the relationship is mentioned here in particular based on at least one other study indicating that the quality of a foster child's relationship with biological siblings may mediate resulting child behavioral issues (Linares, Li, Shrout, Brody, & Pettit, 2007).

At least one study has associated the number of foster children in the home with increased problematic behavior among those foster children (Moore et al., 1994). Thus, it is possible that the removal of a foster child may help to calm the atmosphere of a foster home. This notion would be further strengthened if, in cases where the CAFAS score improved, the foster siblings who were removed from the home displayed more negative behaviors, perhaps identified through their own CAFAS scores or their reasons for removal from the home. However, these analyses are beyond the scope of this dissertation.

The notion that foster sibling removal may calm the atmosphere of a foster home, resulting in improved child functioning for the remaining foster children would be weakened if the foster siblings who were removed were immediately replaced by another foster who joined the placement. Upon further examination, the correlation between these two variables indicated a strong relationship (.86) between foster sibling removal and new foster sibling placement. This may suggest that the size of the household composition does not necessarily change just because foster siblings are removed. However, it does not necessarily dispute the notion that foster children with especially negative behaviors may be the ones that are removed from the home and that their removal may lessen chaos in the home, resulting in improved functioning for foster children who remain in the home. Future research should expose the potentially complex relationships between these variables.

Hypothesis 3 (H₃) considered the relationship between foster sibling presence and child functioning. It was hypothesized that a negative relationship between foster sibling presence and child functioning would be found, indicating that foster sibling presence is associated with declines in child functioning. The relationship between whether foster siblings were present when the child was placed in the home and the total CAFAS score was indeed significant. The presence of at least one foster sibling in the home negatively affected child functioning. When a foster sibling was present in the home, CAFAS scores declined by approximately 17 points.

Hypothesis 4 (H₄) addressed a possible negative relationship between caseworker change and child functioning, such that caseworker change was expected to be associated with declines in child functioning. Caseworker change was significant in the model, but was unexpectedly associated with increased child functioning. If a caseworker change occurred, child functioning scores improved by approximately 10 points. Upon further examination, it was found that in cases where the CAFAS score had not changed, caseworkers often had not changed either. However, in cases where the CAFAS score either improved or declined from the last score, caseworkers were more likely to have changed. While this finding does not elucidate the reason for the directionality of the association between caseworker change and child functioning, it may indicate that another variable is mediating the relationship between caseworker change and child functioning. It is hypothesized that perhaps the quality of the relationship between caseworker and foster child or other caseworker factors such as experience and education level may affect whether a change affects child functioning positively or negatively.

It was also hypothesized that artificial reporter bias in relation to the CAFAS score may be affecting the results. In completing a CAFAS assessment, items are endorsed if they have been known to be true for the child. Potentially, as caseworkers

change, newer caseworkers are less aware of the child's current behaviors and conditions, and thus check fewer items, resulting in an improved CAFAS score. In fact, the CAFAS manual suggests that the CAFAS should be scored at least a month after admission in order to ensure that CAFAS respondents are more aware of all potentially relevant issues (Hodges, 2005b). Though statistical examination of this hypothesis was beyond the scope of this study, future research could compare CAFAS items with other case-related information to evaluate whether caseworkers were aware of all documented issues.

Hypothesis 5 (H₅) concerned the relationship between the final variable in the model, caseworker contact, and child functioning. A positive relationship between the two variables was expected, in that caseworker contact would be associated with improved child functioning. In fact, caseworker contact with the foster child was significant in the model, and results indicated a positive relationship between caseworker contact and child functioning. Specifically, it was found that at least one face to face contact between the caseworker and the foster child improved CAFAS scores by approximately 9 points.

Control Variables

Further analyses focused on the control variables in the GCA model and indicated that they were also significant. Specifically, the amount of time from admission to assessment was significant and indicated that for every month foster children spent in care, their functioning scores improved slightly. This finding is supported by descriptive analyses comparing CAFAS scores at admission and discharge, illustrating improvements in functioning from admission to discharge for sample foster children. These results also track with previous research indicating that foster children show modest improvements while in care in the areas of psychological adjustment and behavior (Barber & Delfabbro, 2005; Barber & Delfabbro, 2003b).

Furthermore, for each additional month in foster child age at the time of assessment, foster children showed slightly more impairment in functioning. Males were more impaired than females by approximately 8 points. Results also indicated that Caucasian-American foster children were more functionally impaired than foster children of “other” races (not including African-American and Hispanic/Latino-American children) by approximately 14 points. No significant differences in child functioning were found between Caucasian-American foster children and either African-American or Hispanic/Latino-American foster children.

Exploratory Analyses

Continuous Versions of the Independent Variables

Since dichotomous versions of the independent variables were used for the initial GCA model, an exploratory model was analyzed using continuous versions of the independent variables. Compared to results of a model using dichotomous independent variables, a model using continuous variables would indicate a relationship between the frequency of an independent variable and child functioning, rather than the presence of an independent variable and child functioning. For example, while a significant result for a dichotomous version of placement change would indicate that any placement change between admission and the time of assessment was associated with child functioning, a continuous version would indicate an association between child functioning and each additional placement change.

Results indicated that none of the independent variables with the exception of foster sibling presence and caseworker contact were significant when the continuous versions of the independent variables were used. Though foster sibling presence and caseworker contacts were associated with child functioning in the same direction as in the

original GCA model, each only altered child functioning scores by less than 1 point in this exploratory model. It is unclear why the other variables (placement change, caseworker change, and foster sibling removal) were not significant in this model. Perhaps the fact that the independent variables were highly skewed affected the ability of a model using continuous variables to produce the expected results.

Stringent Definition of Placement Change

An additional exploratory model was analyzed to investigate whether a more stringent definition of placement change that excluded temporary living conditions such as respite care and hospitalization would improve model results. When the model was analyzed using a definition of placement change that excluded temporary living conditions, results were similar to the initial model. However, when temporary living conditions were excluded, the amount of change in the total CAFAS score when a placement change occurred was lessened. In fact, though both definitions were significant, when a placement change occurred in the initial model that included temporary living conditions, child functioning scores deteriorated by approximately two and a half points more than in the model using a definition of placement change that excluded temporary living conditions. This finding supports the notion that all changes may negatively affect children and that a broader definition of placement change may more appropriately reflect foster child experience.

CAFAS Domains

Additional exploratory analyses were conducted using each CAFAS domain as the dependent variable in the model. Results indicated that none of the models using the individual CAFAS domains were a better fit for the data than the model using the total CAFAS score as the dependent variable. Generally, models for each of the domains

showed significant results for a few of the independent variables. However, though the possible domain scores ranged from 0 to 30, the change in domain score based on the presence of an independent variable was often less than 2 and never greater than 5 for any of the domain models or independent variables. The lack of significant results for individual CAFAS domains may be reflective of the additive nature of the CAFAS total score which is calculated by summing the domain scores. In fact, previous research has suggested that the CAFAS total score is a more reliable indicator of child functioning than any of the CAFAS domain scores individually (Hodges et al., 1999).

Individual Agencies

When the model was run individually for each agency, results for the model using CHSWV's data were similar to results of the model using the entire dataset in that all of the independent variables were significant. However, the amount of change in CAFAS score based on the presence of each individual variable was more pronounced in the model that included only CHSWV data. For example, while a placement change resulted in a 9 point decline in CAFAS total scores for the model that included all data, for CHSWV data, a placement change resulted in a 13 point decline in CAFAS scores. All independent variables followed this pattern. The most pronounced difference between the two models was in foster sibling removal, where a removal resulted in a 17 point improvement in the CAFAS total score for the model that included the entire dataset while CHSWV's data reflected a 43 point improvement. Potentially, the dataset including CHSWV's data was most similar to that of the model using the entire dataset because CHSWV contributed nearly 60% of the records. Results for both of the other agencies indicated that most of the independent variables were not significant when only their data was used for the model. One explanation for may be that the lessened change in CAFAS scores in the model including the entire dataset compared to the CHSWV

model was reflective of the inclusion of the other two agencies' data, which may have masked the results.

For the model including only Omni's data, none of the independent variables were significant. However, results indicated that CAFAS scores for children of races other than Caucasian-American, African-American, and Hispanic/Latino-American foster children were significantly improved over Caucasian-American foster children by approximately 49 points. It is unclear why the independent variables were not significant for a model including only Omni's data, and further investigation would be required to illuminate this unexpected finding.

For DePelchin, foster sibling presence and caseworker contact were the only independent variables that remained significant in the model. The improvement in CAFAS score when a foster sibling was present in a home or the caseworker had face to face contact with a child was slightly more pronounced (approximately 8 points in each case) in the model using DePelchin's data than the model using the entire dataset. Unlike the model including all data, CAFAS scores for African-American foster children were worse than those of Caucasian-American foster children by approximately 30 points for the model using DePelchin's data only. Similar to the questions surrounding Omni's results, further research would be required in order to elucidate these observations.

Summary

In summary, results of the GCA model indicated that all of the independent variables and control variables were associated with changes in child functioning. Of the independent variables, placement change and foster sibling presence were associated with decreases in child functioning while foster sibling removal, caseworker change, and caseworker contact were associated with increases in child functioning. The independent variables were associated with child functioning in the expected direction with the

exception of caseworker change and foster sibling removal, which were positively associated with child functioning. Exploratory analyses related to these two variables indicated that other variables such as the quality of the relationship between the foster child and their foster sibling and caseworker may be mediating these relationships.

Further exploratory models were analyzed that examined the use of continuous independent variables, a stricter definition of placement change, the use of the individual CAFAS domains as dependent variables, and individual agency results. Findings indicated that none of these modifications to the model provided a better fit to the data, with the exception of the model using only CHSWV's data. Results using only CHSWV's data mirrored those of the model including the entire dataset, but in the CHSWV model, the presence of independent variables was associated with more pronounced change in total CAFAS scores.

LIMITATIONS

As in any research study, there are several limitations that should be considered in interpreting the findings of the present investigation. Limitations of this study include racially disproportionate data, a limited number of children who met the criteria for the study, and inconsistency in the frequency and duration of treatment foster care services. In terms of racial percentages, though national statistics indicate that only approximately 40% of foster children are Caucasian-American (USDHHS, 2009d), the study sample consists of 71.5% Caucasian-American foster children. Additionally, only 14.1% of children in the sample were African-American and only 2.4% were Hispanic/Latino-American. Caution is therefore warranted in generalizing these results to the entire foster child population.

Moreover, though the study was focused on children who had received treatment foster care services, the frequency and duration of those services differed across foster

children. Some children were in treatment foster care homes during their entire stay with the agency and others were in only one treatment foster care home and for a short period of time. Because of this, care should be taken in generalizing these results to a treatment foster care population. Further, because a large percentage of foster children in the care of participating agencies did not meet the criteria for inclusion in the study (63%), caution should be taken when generalizing the results to the participating agencies. However, this concern is lessened based on demographic similarities between the final sample and all foster children in the participating agencies.

Additionally, data were collected from private foster care agencies using a specific software program. These agencies may differ in some systematic way from other agencies not using this software. For example, perhaps only private agencies would have larger budgets and would be able to afford a software system, or perhaps those agencies that utilize software systems have more access to data related to child outcomes, and thus are able to focus on strategies to attain superior child outcomes.

Another limitation is that some potentially relevant variables that were unavailable for the study. For example, the model for this study included factors such as biological family contact were not available for analysis. Additionally, little information was available about the child's experience before or after entering the care of the participating agency. This includes information related to the child's experience in their original home such as type and severity of maltreatment, as well as experiences following entry into the foster care system, such as age at entry and any substitute care experiences previous to or following involvement with participating agencies. Previous research has pointed to the importance of these variables in evaluating child outcomes (James, 2004; Connell et al., 2006; Berrick et al., 1998; McAuley, 1996; Eggertsen, 2008; Rubin et al.,

2007) and their absence may yield an incomplete picture of factors that may affect child functioning.

IMPLICATIONS

The findings of the present investigation in concert with the literature on foster child outcomes suggest the need for several improvements in foster care policies and practices. Those implications may be viewed at the various levels of the theoretical model for the study. More specifically, the results have relevance for policy and practice at the macro, mezzo, and micro levels of General Systems Theory.

At the macro level, the implications of this research range from the identification of youth who may be especially at risk for decreases in functioning during care, support for increased caseworker face to face contact with foster children, the need to minimize system volatility, the advancement of efforts to minimize the number of children in a foster home, and expansion of national policies on foster child stability. Findings related to the identification of potentially at risk youth indicate that foster children may be at a higher risk of functional impairment if they are older, males, Caucasian-American, or African-American. Policies should support the provision of additional services to these children in order to avoid the potential negative affects of change. Perhaps these children could be targeted with intensive casework activities or assigned to experienced caseworkers who are less likely to leave the agency.

Additionally, macro level policies supporting increased face to face contact (e.g, decreased caseloads, increasing minimum contact requirements) between caseworkers and foster children should be developed to mitigate the negative affects of the foster care system's volatility. These endeavors should target all foster children, but especially those with unstable histories. Findings from this study indicate that policies encouraging increased face to face contact would result in improved foster child functioning.

Based on findings from this study, the number of foster children in each home should be minimized. Although this undertaking may seem daunting due to the limited availability of foster homes (Roper, 2008; USHR, 2004; CWLA, 1997), it may be necessary in order to facilitate optimal foster child functioning. Indeed, the evidence from this study on the deleterious effects of higher numbers of children in foster homes may help encourage strategies to increase the number of available homes. Macro level support for foster parent and recruitment and retention is vital to this effort.

National policies related to child stability should be revised to utilize an expanded definition of stability. Federal legislation focused on legal stability may be in conflict with the goal of relational stability (Stott & Gustavsson, 2010). Continuity in environments and relationships should be considered relevant to the stabilization of foster children.

Findings from this study also have mezzo level implications for practice. For example, caseworkers should not underestimate the importance of contacting foster children in person and establishing strong relationships with them. Efforts should be made to reduce administrative duties such as paperwork, to facilitate increased availability for face to face visits with the foster children on their caseloads.

Additionally, efforts should be made to assess the quality of the relationships between foster children and their caregivers, caseworkers, and foster siblings. The results of such assessments would help to predict the potential stability of such relationships. The use and improvement of techniques to match foster children with stable foster homes should be increased, and innovative efforts should be made to determine which foster children are most likely to complement each other. Relationships between foster children and potential foster siblings should be examined to determine whether placement in the same home will likely benefit them both. Similarly, methods to assess the likely

consequences of a caseworker's assignment to a particular foster child would help to reduce the risk of further volatility and thus positively affect child functioning.

Micro level implications of this work include the need to individualize care for foster children with an eye to decreasing volatility while in care. Though findings for this study were unclear in relation to caseworker change and foster sibling removal, the results of the exploratory analysis suggest that perhaps individualizing care for children and avoiding generic care decisions based on availability could reduce the occurrence of changes that would negatively affect child functioning. New assessment tools would be helpful to these efforts, providing guidance in the potential affects of change at a particular time in a child's life. Additionally, since this study indicates that even one placement change may have a negative affect on child functioning, these efforts may be more effective if children who are at higher risk of functional impairment while in care are targeted prior to their first placement.

Certainly, while practitioners should heed policies supporting placement change when it involves moves that may be beneficial for children such as sibling placements and less restrictive living environments (NRCFCPP, 2005a), the results of this study suggest that even these should be kept to a minimum. Again, individualizing these decisions based on the characteristics of particular children is fundamental to these efforts. Strategies to reduce placement change should be established so that children are placed in appropriate homes initially and can avoid future disruption. However, these strategies should be utilized after a placement change as well, as psychological distress following placement change can be mitigated by the strength and stability of the resulting situation (Perry, 2006). Additionally, practitioners should consider that while temporary living conditions such as respite and hospitalization often cannot be avoided, perhaps

additional services could be provided to help avoid the negative affects on child functioning associated with temporary living conditions.

DIRECTIONS FOR FUTURE RESEARCH

Future research should incorporate variables that will allow for a better understanding of the effects of system involvement on foster child functioning. For example, other aspects of the independent variables employed in this study could be incorporated into future research to explore their potential impact on foster child functioning. Subsequent studies should consider varying dimensions of change that would include frequency and duration, but also type of change, timing of change, change trajectories, patterns of change, and reasons for change. Additionally, some measure of the quality of foster child relationships would be useful in determining which changes might be beneficial. Differentiation between positive and negative changes based on the quality of the child's current relationships could be crucial in understanding the effect of change on foster children.

This study found that placement change, regardless of definition and amount, can negatively impact child functioning. Future research should expand on these findings, focusing on the effects of short-term and temporary living conditions. Subsequent studies should also explore approaches that could mediate the negative effects of placement changes due to temporary living conditions such as respite and hospitalization. Though these often cannot be avoided, perhaps measures could be put into place in order to lessen the negative affects associated with temporary living conditions. Future research should focus on temporary living conditions and their importance in terms of child functioning with an eye toward potential interventions.

Further investigations should examine relationships that are created through the child's contact with the child welfare system and the effect of changes in those

relationships on foster child functioning. In this study, caseworker contacts were found to significantly impact child functioning. Additional information beyond just the frequency of caseworker contact would include duration, missed appointments, and the importance of other types of contacts that could provide additional insight into the potential protective effects of caseworker contact on child functioning. Another important point of contact for a foster child is often the child's therapist. Future research should examine therapist changes and various dimensions of contacts with therapists to explore the importance of this relationship as well.

The intriguing relationship between caseworker change and child functioning should be investigated further. Findings from this study indicated that the effect caseworker change on child functioning may vary based on other currently unknown factors. Caseworker factors that would help to illuminate these other factors, such as the quality of the relationship between the foster child and the caseworker, should be examined. For example, caseworker variables such as experience, educational background, age, ethnicity, gender, and matches between caseworker and foster child demographics, along with caseload, and caseworker experience and education may be telling in terms of caseworker change and its effect on child functioning. Future research should explore various dimensions of caseworker change in order to determine when changes may be beneficial to foster children.

Similarly, future research should evaluate the relationship between foster sibling removal and foster child functioning. Like caseworker change, results related to foster care removal and functioning suggested that another unknown variable may be mitigating the relationship between these two variables. Foster sibling variables that should be explored include those related to the relationship between the foster sibling and the foster child as well as foster sibling demographic variables and similarities and differences

between those and the foster child's demographic information. Additionally, foster sibling functioning should be included to explore whether their absence may have a calming affect on the home. Complicating this issue is the fact that while foster sibling removal may at times be positive for foster children remaining in the home, the removal represents a placement change for the foster sibling and could negatively affect their functioning.

Further, various dimensions of child functioning could provide insight into the relationship between child functioning and change. Future studies should focus on the individual CAFAS domains to determine which child functioning domains may be more or less affected by change. Additionally, studies addressing CAFAS Tiers[®] client types could help practitioners focus on services that would be most useful in alleviating the negative affects of change for particular types of foster children. The CAFAS Tiers[®] is a procedure for generating client types based on patterns of scores of the individual CAFAS domains. These client types can be used to classify clients into one of seven hierarchical client types based on CAFAS domain scores. Client types at the higher end of the hierarchy indicate more pervasive issues that are likely related to greater service needs (Hodges, 2005b). The use of CAFAS Tiers[®] client types could provide information about which client types may be most affected by change.

Future research should further advance our understanding of the effects of system involvement on child functioning by using representative samples that allow for the exploration of results with subgroups of the population. For example, results related to foster children from various racial groups and younger foster children should be examined so that findings can be applied to these groups as well. Exploration of diverse subgroups of the population who have different needs and circumstances can facilitate a better understanding of how different types of children experience change while in

substitute care. Additionally, other factors that may make children more or less at risk of decreased functioning should be identified. These strategies could lead to reductions in change and improved child functioning.

A focus of future research on treatment foster care is warranted as well. Treatment foster care programs provide a home environment for children who would otherwise be placed in more expensive residential facilities. This area of research holds promise for the field in terms of cost-effective placement solutions (Bryan, 2004) and effective treatment for maltreated children with special needs. Subsequent studies should explore the effects of various types of placements and the services that are provided through them in terms of their effect on treatment foster child functioning.

CONCLUSIONS

In order to fully appreciate the effects of foster system involvement on foster children, a more comprehensive approach that incorporates many different types of changes when evaluating foster child stability would better represent the child's experience of foster care. This study aspired to advance that objective by exploring the effects of various types of change and various definitions of placement change on child functioning. Findings indicated that placement change and foster sibling presence were associated with decreases in child functioning, while caseworker face to face contact with the child was associated with improvement in child functioning. Surprisingly, caseworker changes and foster sibling removal were associated with improvement in child functioning as well.

These findings support the notion that foster care system involvement affects child functioning, particularly in relation to the extent to which the system supports foster child stability. The conceptual framework for this study uses General Systems Theory to identify potential reasons for these findings. At the macro level, General Systems Theory

exposes foster care system policies and procedures that may implicitly affect child functioning. These policies, such as those mandating least restrictive environments and sibling placements, may have been intended to support foster child interests, but at times lead to disruption in environments and relationships. Family Systems Theory at the mezzo level establishes the importance of relationships between the foster child, members of the foster home, and caseworkers and the relevance of these relationships in examining foster child outcomes. Based on Attachment Theory, consistency in relationships with these individuals could positively affect foster children. At the micro level, this theory identifies inherent challenges to attachment for foster children due to maltreatment and removal from their biological families. Additionally, Attachment Theory provides insight into the exacerbation of attachment issues resulting from foster care system involvement through severed relationships to people with whom the child might attach. Theoretically, disruption in relationships with people to whom they might attach is what leads to additional functional impairment for foster children. The study used this conceptual framework to examine the volatility within foster care system and its affect on child functioning.

The importance of stability in a foster child's life is exemplified by a recent study focusing exclusively on children with dire functional concerns such as extreme emotional disturbance, aggression toward adults, imminent risk of harm to self or others, and substance abuse. These foster children, considered the most difficult to place and with multiple previous placements, were placed in residential treatment centers committed to avoiding placement disruption. Outcomes after one year indicated that 85% of these children moved to less restrictive placements and functioning scores improved significantly (Armour & Schwab, 2005). This study highlights the importance of the

governmental obligation to maintain stable environments for foster children and the marked improvements for children that policies supporting stability can have.

The results of this study call the field to recognize that the well-being of children in foster care is contingent on far more than just changes to their placement. Indeed, the overall volatility within the foster care system should be examined for its negative affect on foster child functioning. More specifically, it is paramount to look systemically at the importance of stability in its numerous manifestations to optimize child welfare services. The importance of this research is further underscored by previous findings suggesting that instability leads to an increased likelihood of future change and negative outcomes (James, Landsverk, & Slymen, 2004; Webster et al., 2000). By maintaining stability and mitigating the negative affects of change whenever possible, further damage to foster children who have already suffered maltreatment and familial disruption can be avoided.

Appendices

APPENDIX A

Comparisons of data from Participating Agencies and Final Sample

Gender and Race

	Gender	Race
<u>Foster Children Nationally</u>	47% females 53% males	31% African-American 40% Caucasian-American 20% Hispanic/Latino-American 5% Multi-Racial 2% American Indian/Alaska Native 2% Other/Unknown
<u>TFC Foster Children in Participating Agencies</u>		
<u>Agency (N)</u>		
Omni (303)	41% females 59% males	23% African-American 66% Caucasian-American 3% Hispanic/Latino-American 6% Multi-Racial 0% American Indian/Alaska Native 2% Other/Unknown
DePelchin (157)	50% females 50% males	26% African-American 45% Caucasian-American 12% Hispanic/Latino-American 15% Multi-Racial 1% American Indian/Alaska Native 1% Other/Unknown
CHSWV (437)	43% females 57% males	8% African-American 79% Caucasian-American 1% Hispanic/Latino-American 4% Multi-Racial 1% American Indian/Alaska Native 8% Other/Unknown
Total (897)	43% females 57% males	16% African-American 69% Caucasian-American 3% Hispanic/Latino-American 6% Multi-Racial 0% American Indian/Alaska Native 4% Other/Unknown

Table (continued)

Final Sample Agency (N)	Gender	Race
Omni (58)	38% females 62% males	22% African-American 69% Caucasian-American 0% Hispanic/Latino-American 7% Multi-Racial 0% American Indian/Alaska Native 2% Other/Unknown
DePelchin (71)	55% females 45% males	17% African-American 54% Caucasian-American 10% Hispanic/Latino-American 18% Multi-Racial 1% American Indian/Alaska Native 0% Other/Unknown
CHSWV (204)	43% females 57% males	11% African-American 78% Caucasian-American 1% Hispanic/Latino-American 6% Multi-Racial 1% American Indian/Alaska Native 3% Other/Unknown
Total (333)	45% females 55% males	14% African-American 72% Caucasian-American 2% Hispanic/Latino-American 9% Multi-Racial 1% American Indian/Alaska Native 2% Other/Unknown

Age at Entry, Admission Dates, and Discharge Dates

Agency (N)	Age at Entry	Admission Dates	Discharge Dates
TFC Foster Children in Participating Agencies			
Omni (303)	13.84	01/26/2005-10/13/2008	10/15/2005-02/24/2009
DePelchin (157)	11.86	11/14/2003-02/13/2009	08/29/2005-03/17/2009
CHSWV (437)	14.41	03/05/2004-03/17/2009	06/26/2004-05/21/2009
Total (897)	13.77	11/14/2003-03/17/2009	06/26/2004-05/21/2009
Final Sample			
Omni (58)	13.59	01/26/2005-10/13/2008	06/01/2006-01/03/2009
DePelchin (71)	10.96	11/14/2003-08/26/2008	12/21/2005-03/17/2009
CHSWV (204)	13.90	03/05/2004-12/26/2008	06/26/2004-05/21/2009
Total (333)	13.22	11/14/2003-12/26/2008	06/26/2004-05/21/2009

Average Time in Care

Agency (N)	Time in Care	Time in Care (TFC Only)	Difference
<u>TFC Foster Children in Participating Agencies</u>			
Omni (303)	649.52	587.21	62.31
DePelchin (157)	359.29	352.17	7.12
CHSWV (437)	334.93	327.13	7.80
Total (897)	522.03	483.66	38.37
<u>Final Sample</u>			
Omni (58)	638.63	516.60	122.03
DePelchin (71)	442.86	428.84	14.02
CHSWV (204)	341.32	314.76	26.56
Total (333)	497.44	441.06	56.38

Average Number of Placements While in Care

Agency (N)	Number of Placements	Number of Placements (TFC Only)	Difference
<u>TFC Foster Children in Participating Agencies</u>			
Omni (303)	2.40	2.06	0.34
DePelchin (157)	1.48	1.46	0.02
CHSWV (437)	1.53	1.46	0.07
Total (897)	1.88	1.80	0.08
<u>Final Sample</u>			
Omni (58)	3.67	2.21	1.46
DePelchin (71)	1.97	1.71	0.26
CHSWV (204)	4.21	1.88	2.33
Total (333)	3.64	1.93	1.71

CAFAS Statistics

Agency (N)	Number of Assessments	Monthly Assessment Rate	CAFAS Scores at Admission	CAFAS Scores at Discharge	Admission to Discharge
<u>Overall</u>					
Omni (303)	2.32	.40	89.21	58.65	-30.56
DePelchin (157)	3.29	.53	90.83	72.36	-18.47
CHSWV (437)	2.93	.69	102.63	90.27	-12.36
Total (897)	2.79	.57	96.03	76.45	-19.58
<u>Sample</u>					
Omni (58)	3.52	.43	104.83	67.76	-37.07
DePelchin (71)	4.66	.41	69.15	60.00	-9.15
CHSWV (204)	3.89	.55	98.97	92.16	-6.81
Total (333)	3.99	.50	93.63	81.05	-12.58

APPENDIX B

Re-Coding of Racial Categorizations

Study Terminology	Omni	DePelchin	CHSWV
African-American	African American	African American, African, Ethnicity Unknown Black, Not Hisp/Not Latino Black, Not Hisp/Not Latino White	African American
Caucasian-American	White	Caucasian, Ethnicity Unknown White	White
Hispanic/Latino-American	Hispanic	Hispanic, Hispanic/Latino Race Unknown	Mexican, Mexican American, Chicano, Puerto Rican
Multi-Racial	Bi-Racial	Bi-Racial, African-American/Anglo, Ethnicity Unknown Multiracial, Hispanic/Black, Hispanic-Caucasian, Hispanic/Latino Amer Indian, Hispanic/Latino Asian, Hispanic/Latino Black, Hispanic/Latino Multiracial, Hispanic/Latino White, Hispanic/White, Multi-Racial, Not Hisp/Not Latino Multirace	Bi-Racial

Table (continued)

Study Terminology	Omni	DePelchin	CHSWV
American Indian/Alaska Native	American Indian	Ethnicity Unknown Amer Indian, Native American, Not Hisp/Not Latino Amer Ind	American Indian or Alaska Native
Other/Unknown	Asian, Pacific Islander	Asian, Asian American, Asian Indian, Ethnicity Unknown Asian, Ethnicity Unknown Race UK, Filipino, Haitian, Jamaican, Middle Eastern, Not Hisp/Not Latino Asian, Not Hisp/Not Latino Race UK, Other, Pacific Islander, Puerto Rican, Unknown	Asian American, Asian Indian, Chinese, Cuban, Filipino, Vietnamese, Other

APPENDIX C

GCA Results for the Continuous Versions of the Independent Variables

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	51.044	10.269	279.923	4.971	<.001
Age	0.213	0.061	284.538	3.509	<.001
Gender	-8.851	3.893	269.054	-2.274	<.024
African-American	3.225	5.822	275.934	0.554	<.580
Hispanic-American	-33.945	13.949	284.454	-2.434	<.016
Other-American	-20.096	6.057	259.597	-3.318	<.001
Time	-0.409	0.165	954.464	-2.484	<.013
Placement Change	0.717	0.382	1007.315	1.876	<.061
Foster Sibling Removals	-0.596	0.998	1009.869	-0.598	<.550
Foster Siblings in Placement	0.983	0.204	795.780	4.807	<.001
Caseworker Change	-1.256	0.723	867.401	-1.736	<.083
Caseworker Contacts	-0.297	0.054	1002.899	-5.484	<.001

APPENDIX D

GCA Results for the Model with Placement Change Excluding Temporary Living Conditions

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	53.078	10.460	329.312	5.074	0.000
Age	0.192	0.059	294.525	3.272	0.001
Gender	-8.491	3.744	275.505	-2.268	0.024
African-American	7.405	5.382	280.944	1.376	0.170
Hispanic-American	-15.320	11.936	275.420	-1.283	0.200
Other-American	-14.540	5.888	273.295	-2.469	0.014
Time	-0.368	0.143	1185.309	-2.573	0.010
Placement Change	6.582	3.031	1177.269	2.172	0.030
Foster Sibling Removals	-16.289	3.493	1186.582	-4.663	0.000
Foster Siblings in Placement	17.044	4.573	847.389	3.727	0.000
Caseworker Change	-9.963	2.951	1206.162	-3.376	0.001
Caseworker Contacts	-7.572	3.105	1124.277	-2.439	0.015

APPENDIX E

GCA Results for the Individual CAFAS Domains

GCA Results for CAFAS Domain: School

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	14.163104	2.752535	353.507	5.145	.000
Age	0.017528	0.015416	315.110	1.137	.256
Gender	-1.800116	0.977540	292.980	-1.841	.067
African-American	1.810306	1.406074	299.203	1.287	.199
Hispanic-American	-3.324804	3.115929	292.975	-1.067	.287
Other-American	-2.113474	1.538168	290.366	-1.374	.170
Time	-0.101968	0.039859	1172.183	-2.558	.011
Placement Change	1.036535	0.839528	1200.971	1.235	.217
Foster Sibling Removals	-0.850777	0.982313	1137.999	-0.866	.387
Foster Siblings in Placement	4.940978	1.244018	761.075	3.972	.000
Caseworker Change	-2.326423	0.817797	1190.976	-2.845	.005
Caseworker Contacts	-4.095867	0.905273	1166.969	-4.524	.000

GCA Results for CAFAS Domain: Home

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	12.441954	2.474291	322.690	5.028	.000
Age	0.048320	0.013828	284.921	3.494	.001
Gender	-1.911941	0.875681	264.242	-2.183	.030
African-American	1.013676	1.260072	270.357	0.804	.422
Hispanic-American	-3.323113	2.791259	264.322	-1.191	.235
Other-American	-2.752200	1.377640	261.387	-1.998	.047
Time	-0.066673	0.036631	1161.207	-1.820	.069
Placement Change	3.580528	0.774438	1204.822	4.623	.000
Foster Sibling Removals	-5.317556	0.901465	1102.937	-5.899	.000
Foster Siblings in Placement	3.874549	1.132090	689.478	3.422	.001
Caseworker Change	-2.981327	0.752088	1175.467	-3.964	.000
Caseworker Contacts	-2.354701	0.836670	1172.293	-2.814	.005

GCA Results for CAFAS Domain: Community

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	-5.572174	2.321223	343.418	-2.401	.017
Age	0.081463	0.013015	306.650	6.259	.000
Gender	-2.361554	0.825923	284.979	-2.859	.005
African-American	1.877505	1.187735	290.900	1.581	.115
Hispanic-American	-4.493529	2.632650	284.933	-1.707	.089
Other-American	-2.221026	1.299714	282.643	-1.709	.089
Time	-0.092522	.033198	1173.490	-2.787	.005
Placement Change	0.985036	00.697670	1197.468	1.412	.158
Foster Sibling Removals	-3.034780	0.818633	1147.312	-3.707	.000
Foster Siblings in Placement	2.270803	1.041559	769.471	2.180	.030
Caseworker Change	-2.193418	0.680741	1195.632	-3.222	.001
Caseworker Contacts	1.150838	0.751547	1159.694	1.531	.126

GCA Results for CAFAS Domain: Behavior Toward Others

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	12.710340	2.058348	334.141	6.175	.000
Age	0.009468	0.011559	299.282	0.819	.413
Gender	-1.584848	0.734279	278.076	-2.158	.032
African-American	2.497294	1.055639	283.649	2.366	.019
Hispanic-American	-1.084524	2.340539	277.986	-0.463	.643
Other-American	-1.198580	1.155626	276.070	-1.037	.301
Time	-0.050849	0.028930	1175.476	-1.758	.079
Placement Change	1.811350	0.605999	1191.496	2.989	.003
Foster Sibling Removals	-3.100557	0.713801	1160.381	-4.344	.000
Foster Siblings in Placement	3.528408	0.914022	787.248	3.860	.000
Caseworker Change	-1.622194	0.592629	1201.022	-2.737	.006
Caseworker Contacts	-0.677250	0.651916	1149.552	-1.039	.299

GCA Results for CAFAS Domain: Moods/Emotions

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	12.929249	1.975009	355.510	6.546	.000
Age	-0.017277	0.011021	314.085	-1.568	.118
Gender	1.046362	0.697261	291.973	1.501	.135
African-American	0.177746	1.003626	298.772	0.177	.860
Hispanic-American	1.004310	2.222551	292.138	0.452	.652
Other-American	-2.109032	1.096786	288.563	-1.923	.055
Time	-0.085885	0.029685	1161.995	-2.893	.004
Placement Change	2.674926	0.629141	1206.633	4.252	.000
Foster Sibling Removals	-2.225731	0.729637	1096.663	-3.050	.002
Foster Siblings in Placement	3.229828	0.910953	705.625	3.546	.000
Caseworker Change	-1.163629	0.609655	1169.139	-1.909	.057
Caseworker Contacts	-1.201750	0.680637	1182.557	-1.766	.078

GCA Results for CAFAS Domain: Self-Harmful Potential

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	4.652027	1.883106	357.882	2.470	.014
Age	-0.009989	0.010534	318.176	-0.948	.344
Gender	0.843869	0.667409	295.867	1.264	.207
African-American	0.826599	0.960214	302.335	0.861	.390
Hispanic-American	-0.053090	2.127382	295.913	-0.025	.980
Other-American	-0.751398	1.050064	292.970	-0.716	.475
Time	-0.008328	0.027628	1169.617	-0.301	.763
Placement Change	0.321760	0.583230	1203.706	0.552	.581
Foster Sibling Removals	-1.662696	0.680351	1125.819	-2.444	.015
Foster Siblings in Placement	0.485684	0.857356	745.535	0.566	.571
Caseworker Change	0.162917	0.567115	1184.790	0.287	.774
Caseworker Contacts	-0.236763	0.629599	1173.146	-0.376	.707

GCA Results for CAFAS Domain: Substance Use

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	-4.428735	2.228469	348.727	-1.987	.048
Age	0.072541	0.012483	310.779	5.811	.000
Gender	-1.453027	0.791614	288.861	-1.836	.067
African-American	-1.827587	1.138610	295.000	-1.605	.110
Hispanic-American	-3.299682	2.523284	288.850	-1.308	.192
Other-American	-2.083072	1.245626	286.302	-1.672	.096
Time	0.013164	0.032220	1171.887	0.409	.683
Placement Change	0.080116	0.678429	1200.482	0.118	.906
Foster Sibling Removals	-1.813586	0.794100	1138.300	-2.284	.023
Foster Siblings in Placement	0.253942	1.006258	758.159	0.252	.801
Caseworker Change	-0.710894	0.661008	1191.390	-1.075	.282
Caseworker Contacts	-1.819040	0.731462	1165.522	-2.487	.013

GCA Results for CAFAS Domain: Thinking

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	7.613654	1.499783	355.192	5.077	.000
Age	-0.029473	0.008453	322.185	-3.487	.001
Gender	-1.057742	0.538340	300.325	-1.965	.050
African-American	0.908689	0.773429	305.567	1.175	.241
Hispanic-American	-0.158408	1.716008	300.146	-0.092	.927
Other-American	-0.184039	0.847438	298.862	-0.217	.828
Time	0.024261	0.020168	1182.824	1.203	.229
Placement Change	-0.692004	0.418673	1176.566	-1.653	.099
Foster Sibling Removals	-0.663942	0.497702	1190.051	-1.334	.182
Foster Siblings in Placement	0.660351	0.647426	880.989	1.020	.308
Caseworker Change	0.746809	0.411640	1206.994	1.814	.070
Caseworker Contacts	-0.532328	0.448995	1134.103	-1.186	.236

APPENDIX F

GCA Results for the Individual Agencies

GCA Results for DePelchin

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	51.021899	18.004450	74.884	2.834	.006
Age	0.059621	0.105922	59.569	0.563	.576
Gender	-14.988262	8.207154	60.500	-1.826	.073
African-American	31.144778	11.282524	60.147	2.760	.008
Hispanic-American	4.210731	13.847864	60.668	0.304	.762
Other-American	-2.669629	10.703912	64.616	-0.249	.804
Time	-0.315834	0.354626	316.762	-0.891	.374
Placement Change	-7.558390	7.556498	312.984	-1.000	.318
Foster Sibling Removals	-2.840777	5.866449	315.823	-0.484	.629
Foster Siblings in Placement	25.729674	7.497752	180.998	3.432	.001
Caseworker Change	6.983907	6.277144	316.532	1.113	.267
Caseworker Contacts	-16.374225	6.009966	314.703	-2.725	.007

GCA Results for Omni

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	95.925880	27.053583	99.392	3.546	.001
Age	-0.000551	0.129433	52.543	-0.004	.997
Gender	-6.101013	10.453209	50.103	-0.584	.562
African-American	13.591441	12.058215	49.335	1.127	.265
Hispanic-American	0	0	.	.	.
Other-American	-48.596007	18.553070	59.576	-2.619	.011
Time	-1.304882	0.611080	176.757	-2.135	.034
Placement Change	-10.074019	8.563047	174.892	-1.176	.241
Foster Sibling Removals	-12.084726	8.137855	167.507	-1.485	.139
Foster Siblings in Placement	-16.108280	9.565660	139.359	-1.684	.094
Caseworker Change	-7.467015	8.287647	176.255	-0.901	.369
Caseworker Contacts	25.254824	17.217797	147.145	1.467	.145

GCA Results for CHSWV

Variable	Estimate	Std. Error	df	t	Sig.
Intercept	28.900505	17.867256	193.509	1.618	.107
Age	0.201605	0.098573	172.559	2.045	.042
Gender	-5.252550	4.287170	162.864	-1.225	.222
African-American	-4.525871	6.725262	170.325	-0.673	.502
Hispanic-American	-57.125014	30.312281	180.531	-1.885	.061
Other-American	-8.498997	7.266155	161.116	-1.170	.244
Time	-0.311461	0.157407	548.639	-1.979	.048
Placement Change	13.028301	3.272418	641.906	3.981	.000
Foster Sibling Removals	-20.349045	6.839432	679.407	-2.975	.003
Foster Siblings in Placement	42.818375	9.202551	481.779	4.653	.000
Caseworker Change	-13.122021	3.461656	689.952	-3.791	.000
Caseworker Contacts	-11.152612	3.534576	628.354	-3.155	.002

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Vita

Kelly Stepura attended the University of Texas at Austin (UT) from 1990 to 1993 and received her undergraduate degree in Psychology. During that time, she participated in an internship within the Quality Assurance and Research Department at the Texas Department of Family and Protective Services' Child Protective Services (CPS). She began her Master's work in Social Work in 1993 at UT while retaining a permanent position as a Research Specialist with CPS, focusing on large grants funded by the Children's Bureau with topics such as risk assessment, decision-making, and child fatalities. After graduating in 1997, she continued her work at CPS and participated in joint research projects involving CPS and Casey Family Programs exploring topics such as family group conferencing and racial diversity in child welfare. Before continuing in her academic endeavors, she was hired as a programmer at KaleidaCare Management Solutions, a company that provides web-based software for foster care and other social services agencies. She was soon promoted to Vice President of Product Development, a position she retains as of this writing. In 2003 she began her doctoral work at UT's School of Social Work. During this time, she taught the School's Research Method's course and assisted in numerous University research projects with such topics as limiting risky behavior among foster children, foster children without placements, HIV/AIDS medication adherence, substance abuse treatment with sexual minorities, violence on campus, and family therapy. Additionally, she led the data team for Dr. McRoy's research branch of the Collaboration to AdoptUSKids. She continues to work as an independent contractor on a number of projects, including evaluations of the Savannah

Family Institute's Parenting with Love and Limits program. While obtaining her doctorate degree, she received the UT Continuing Fellowship, the Social Work Foundation Advisory Council Endowed Presidential Scholarship, and for two years, the Hogg Foundation for Mental Health Fellowship.

Permanent address (or email): 1905 Belford Drive, Austin, Texas 78757

This dissertation was typed by Kelly Jane Stepura.