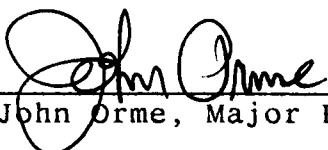
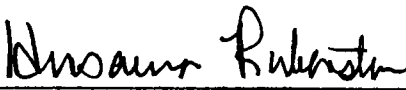
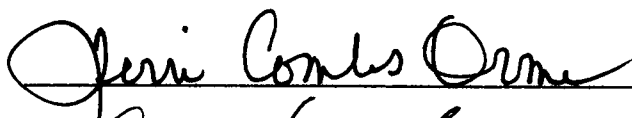


To the Graduate Council:

I am submitting herewith a dissertation written by Maureen Grimes Croft entitled "Substitute Care in Tennessee: A Study of Placement Stability". I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Social Work.


John Orme, Major Professor

We have read this dissertation
and recommend its acceptance:


Accepted for the Council:


Associate Vice Chancellor and
Dean of the Graduate School

SUBSTITUTE CARE IN TENNESSEE:
A STUDY OF PLACEMENT INSTABILITY

A Dissertation
Presented for the
Doctor of Philosophy
Degree
University of Tennessee, Knoxville

Maureen Grimes Croft
December, 1999

DEDICATION

I dedicate this dissertation to
my husband Mark
and
my sons Carl and Anthony

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Abstract

The number of children removed from home and placed in foster care is large and growing. While foster care and other out-of-home placements are, by nature, designed to be temporary, many children in substitute care experience recurrent moves (termed "replacements" or "disruptions"). Placement instability routinely thwarts the permanency planning efforts mandated by current laws and agency policies. Identifying replacement risk factors has been difficult due to methodological limitations. Oftentimes nonprobability samples have been used, risk factors have been limited to demographic variables and constructs assessed using measures of unknown reliability and validity, and statistical methods have been used that do not adequately account for the distributional characteristics of replacement. To date, few factors, such as child age and the presence of emotional/behavioral problems, have been linked consistently to replacement risk. The study was divided into two portions. The first portion examined an extensive array of replacement risk factors, among a random sample of 658 Tennessee children in state custody, using Negative Binomial Regression, a statistical procedure more appropriate than those previously used for analyzing replacement. Risk factor and replacement data were collected using record reviews and, more importantly, personal interviews with multiple sources (e.e. children,

parent, workers, teachers). Teams under the auspices of the Tennessee Commission on Children and Youth collected these data as part of an annual review to determine how well system functions were carried out in serving children and families. Information was augmented using data collected from an administrative data base maintained by the Tennessee Department of Children's Services. The second portion of this study attempts to take disruption research a step beyond what has been achieved in previous studies by providing a proposed framework by which to understand replacement and by testing this framework in an exploratory manner.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Children in Substitute Care

When birth parents relinquish custody of their children to public and private agencies and when courts exercise their power to remove children from homes deemed inadequate at meeting their basic emotional, physical and developmental needs, these intermediaries act upon a belief that certain children will fare better in a new environment than if raised by their biological parents. Once the decision is made to remove children from their biological homes and place them in out of home care, their well-being is dependent upon the actions taken by numerous paid professionals briefly interceding to effect positive life experiences for them. This is an awesome responsibility for the agencies which form our nation's child welfare system and for the courts which oversee this endeavor not only because protecting and caring for children is a tremendous task but also because the number of children in need of temporary or permanent homes is sizable.

Although estimates of the number of children in substitute care vary, most data indicate that at any point in time over the last few years between 300,000 and 500,000 children in the United States lived in substitute care under the jurisdiction of child welfare agencies. More recent

estimates indicate that approximately 450,000 children currently reside in out of home care (Lakin, 1994, Tatara, 1994)¹. In fact, an estimated 636,000 children in the United States spent at least one day in substitute care in 1991, although this number has most likely risen in recent years (Tatara, 1994).

Data indicate that the number of children in care has increased rather substantially over the last decade, but this increase can only be understood from an historical vantagepoint. The number of children residing in substitute care was estimated to be at an all time high of approximately 500,000 children in 1977 (cited in Fein & Maluccio, 1992) but then dropped between 1980 and 1985 to nearly half that number (House Select Committee on Children, Youth, and Families, 1989, Fein & Maluccio, 1992). Much of this decline has been attributed to the application of newly-adopted permanency planning efforts mandated by the Adoption Assistance and Child Welfare Act of 1980 to a population of children "backlogged" in the system (Anderson, 1990; Wulczyn & Goerge, 1992)². After 1985, the number of

¹. These numbers are far from precise because the United States currently has no legal requirement or procedural mechanism to mandate the reporting or the centralized collection of information about caseloads in public and private agencies.

². The Adoption Assistance and Child Welfare Act of 1980 mandated permanency planning initiatives on the part of states and the establishment of family reunification programs in order to receive federal reimbursement for foster care expenses. The foster care population declined

children in substitute care began to increase rather substantially. In fact, the number of children in care increased by an estimated 23% between 1985 and 1988 (Select Committee on Children, Youth and Families, 1989) and by an estimated 60.7% between 1986 and 1992 (Tatara, 1994).

As has been noted by researchers examining aggregate data of the sort presented here, the increase in the number of children served in substitute care is best understood by examining admission and discharge rates for this population (Wulczyn & Goerge, 1992; Tatara, 1994). Tatara (1994) obtained data from the Voluntary Cooperative Information System (VCIS) to examine trends in caseload size between 1986 and 1991 with some comparisons made to data obtained from previous years³. Tatara found that, although caseload size increased rather dramatically between 1986 and 1991, much of the increase was attributable to fewer children exiting care⁴. These findings replicate those of Wulczyn

in the early 1980's.

³. The VCIS collects data submitted voluntarily by states and derives national estimates. Tatara indicated that fewer than forty states participated during the years under study.

⁴. Tatara examined entry and exit rates for children in care. Entry rates represent the proportion of children who entered care during a given fiscal year in relation to the total number of children served by the substitute care system during the same fiscal year. This was determined by using the formula $a / (a + b)$, where a represents the count of substitute care entrants and b represents the number of children in care at the start of the fiscal year. Exit rates were figured by using the formula $c / (a + b)$, with c representing the count of substitute care exits during the

and Goerge (1992) using foster care tracking systems in New York and Illinois. These researchers found that prior to mid-1986 New York and Illinois experienced stable or declining caseloads, which was a by-product of similar admission and discharge rates. After 1986, increasing entries into care were exacerbated by stable or declining discharge rates⁵. Thus, the Adoption Assistance and Child Welfare Act of 1980 may have initially acted as a catalyst for the discharge of children in substitute care, but this success was short-lived. After 1985, more children entered substitute care than in previous years, and our child welfare system did not function as effectively in discharging them as it had shortly after implementation of the Act.

Permanency Planning

The Adoption Assistance and Child Welfare Act of 1980 brought the issue of "permanency planning" into the forefront of our nation's thinking about child welfare, as this law challenged courts and agencies to better define and carry out permanency plans for children in care⁶.

fiscal year. Tatara found that both entrance and exit rates actually declined between 1986 and 1991.

⁵. For example, in New York, discharges declined by 11% between 1985 and 1987. In 1989, admissions increased by 26%, but discharges increased by only 14%.

⁶. The Adoption and Child Welfare Assistance Act of 1980, often considered a seminal piece of legislation in the treatment of children, attempted to address some aspects of

"Permanency" is a popular term used throughout professional child welfare literature as well as a term found in administrative guidelines and laws dealing with the management of children matriculating through the child welfare system. Blacks Law dictionary, a widely used source of definitions for legal scholars, defines "permanent" as something that is "continuing or enduring in the same state, status, place or the like without fundamental or marked change..., fixed or intended to be fixed;... stable." (pp. 1025) Permanency planning has been defined in the child welfare literature as the "systematic process of carrying out within a brief time limited period a set of goal-directed activities designed to help children live in families that offer continuity of relationships with nurturing parents or caretakers and the opportunity to establish lifetime relationships" (Maluccio, et. al., 1986).

court, agency and worker activity that directly impact a child's ability to achieve permanency. The Act provided that courts explicitly determine whether the child welfare agency made "reasonable efforts" to prevent placement of each foster child and to return the child home. The Act mandated that foster care cases be reviewed at least every six months and a hearing be held within eighteen months of placement into foster care to determine a permanent placement arrangement for the child (Social Security Act, 42 U.S.C. Section 620 et seq.). This act was specifically aimed at preventing the removal of children from their biological homes and preventing what has been termed "foster care drift" where children remain in foster care for long periods of time (a setting designed to be temporary in nature) (North American Council on Adoptable Children, 1990). By most objective standards, the Act has been perceived as successful, at least initially, in affecting positive permanency outcomes for children in care (North American Council on Adoptable Children, 1990).

These definitions provide some insight into what legal and social service entities mean when they define permanency as a goal for children in care; but, as even the best legal and social service definitions demonstrate, "permanency" is a rather ambiguous concept, and permanency planning is often a rather indeterminate goal. Nevertheless, our child welfare system functions under a legal and perhaps even a moral mandate to make a good faith attempt at permanency for children in care.

Generally speaking, birth family reunification and adoption are considered the most desirable goals for children primarily because they are thought to provide children with the best chance to achieve permanency in a family environment⁷, which has long been considered the most optimal environment for raising children (Trattner, 1994; Sokoloff, 1993). Long-term foster care and institutional care, such as residence in a group home, residential treatment facility or psychiatric hospital, are considered to be much less desirable placements for children because they do not offer children an opportunity to have the permanency, stability and sense of belonging that a birth or adoptive family can provide (and because placements in these facilities are an expensive undertaking for states).

⁷. For an in-depth review of research focusing on the relative success of placement options in achieving permanency, see Barth, et. al., 1995 & Barth & Berry, 1990).

After a decade of unyielding caseload growth coupled with evidence of decreasing discharge rates for children in substitute care, it is time for researchers, policy-makers and practitioners to question whether "permanency planning", as defined by the mandates of the Adoption Assistance and Child Welfare Act of 1980, has run its course in terms of effectiveness for children in care. With no new gains in the past decade, it may be that the proverbial tea bag has been squeezed of the last good drop of liquid. In order to stem the tide of increasing caseload sizes, researchers, policy-makers and practitioners must turn their attention to investigating and implementing alternative permanency planning approaches for children in substitute care. It is possible that this will be best achieved by broadening the definition of permanency planning beyond that delineated by the Act concerning the need for regular case reviews, goal setting, adoption and family preservation to include other aspects of practice that may function to mitigate or temper the chance that children will achieve a positive permanency outcomes. Placement instability is one area ripe for meaningful research, for placement instability routinely thwarts even the best attempts at permanency planning for children.

Purpose of the Study

The primary purpose of this research was to explore placement instability as an alternative research emphasis

for those interested in helping children in substitute care achieve permanency. The dissertation used information obtained from two data sets, collected by two state agencies in Tennessee, on the foster care and other substitute care experiences of children in state custody in Tennessee. These data sets provided a unique opportunity to explore the placement histories of 658 randomly selected children and identify variables associated with increased chance of disruption.

The present research analysis is divided into two sections. The first attempts to quantify the replacement experiences of children in substitute care in Tennessee and identify risk factors associated with disruption. The second portion of this research attempts to take disruption research a step beyond what has been achieved in previous studies by providing a proposed framework by which to understand replacement and by testing this framework in an exploratory manner.

CHAPTER II

REVIEW OF THE LITERATURE

Focus of Literature Review

This literature review focuses on two types of placement instability: foster care disruption (which will also be referred to as "replacement") and adoption disruption. This review will summarize the published research addressing foster care replacement and adoption disruption and will attempt to offer a critical analysis of this research, particularly as it pertains to the practical implications of findings for child welfare researchers and practitioners in their pursuit of placement permanency for children.

Field research is difficult to conduct; and, although researchers have devised a variety of creative ways to study foster care replacement and adoption disruption, this body of research is not immune from the methodological hazards befalling even the best attempts at field research. As such, special attention will be paid to the definitional and methodological issues that make research in this area and the interpretation of results challenging.

Foster care replacement and adoption disruption are treated together in this analysis because they are similar in many respects. Both almost always involve matching children with non-relative families; and, as will be demonstrated, many of the causes and antecedents of

disruption are similar for these two populations.

Defining Foster Care Replacement

How Replacement is Defined in the Literature

Although there has been very little written on the subject of foster care replacement, an adequate working definition can be gleaned from the research reviewed for this dissertation. In the literature, a placement is usually considered to have "disrupted" when children are removed from one temporary placement and placed in another while they are in care awaiting a viable permanency plan. Placements can be either foster homes or other temporary living arrangements such as group homes or residential treatment facilities.

Limitations in the Definition of Replacement

Differentiating Between Moves That Are Part of a Permanency Plan and Those That Are Not

Although there is general agreement that children fare better in stable foster care placements, there is no consensus on what makes for an unstable placement. This point is easily demonstrated by looking at the way that foster care replacement is defined in professional literature. Placement instability is typically measured by counting the number of moves that a child experiences while in care. This method of evaluating foster care disruption does not provide us with a complete picture of foster care replacement because we have little information about whether

the number of moves any given child or group of children experiences is reasonable or appropriate. For example, research examining foster care replacement does not distinguish between instances in which children are reunited with birthparents, placed in a permanent adoptive home, returned to care after a failed attempt at reunification with their birth parents (usually termed "foster care recidivism"), or moved because a foster home closes or there is a poor match between the child's needs and the foster parent(s)' parenting abilities.

Differentiating between moves that are part of a viable permanency plan (as the first two examples might indicate) and moves that are not part of a permanency plan (as the last three examples might indicate) is important because the goals are quite different. Children returned to birthparents or placed in adoptive homes are presumably moved under the assumption that the new placements will improve their situations by affording them a chance at permanency. Thus, these moves are often considered "successes" by workers in the field. Moves that are not part of a permanency plan are more apt to be considered placement "failures" by social workers.

Only one study was identified that attempted to separate "successful" from "unsuccessful" moves. In an evaluation of the Chicago Services Project, a specialized program aimed at reducing foster care disruptions in a

sample of 51 youths with prior histories of multiple moves, Tabor and Proch (1987) attempted to refine their definition of the dependent variable, placement success, by measuring the number of "unplanned" moves instead of limiting their analysis to the number of moves. However, they found that the reasons for placement changes prior to referral to the CSP program were not reliably recorded in case records. This example illustrates a second issue that is often raised in operationalizing the construct "foster care replacement". When case records are used as a source of research data, as is often the case in child welfare research, operational definitions are limited by the amount and type of information that is contained in records⁸.

Differentiating Between "Fault" and "No Fault" Moves

A review of research for this dissertation revealed no studies attempting to tease out whether moves that were not part of a viable permanency plan (i.e., placement "failures") were due to "situational" or "no fault" factors (i.e., death or illness in the foster family, foster family relocation or the closing of a residential treatment program) or whether the moves were the result of poor matches between the needs of children and placement

⁸. The limitations of using case records as a source of data will be revisited later in this paper, but those wishing a more detailed treatment of the strengths and weaknesses of data collections methods in child welfare research may find From Child Abuse to Permanency Planning: Pathways and Placements (Barth, et. al., 1994) helpful.

resources (i.e., child behavior problems, family not willing to parent this type of child). By defining placements that are not part of a permanency plan in this way, it becomes clear that some unintended moves are due to situations that are, in essence, out of the control of caseworkers (i.e., "situational" or "no fault" moves), and some may be susceptible to mitigation by caseworkers (i.e., disruptions due to poor matching, poor preparation of and/or ongoing services to foster parents and child or a combination of all three).

Whether children respond differently to moves that are part of a permanency plan and those that are not and whether children respond differently to "fault" or "no fault" moves are ultimately empirical questions that should be addressed by researchers, especially since social workers in the field often treat these moves as if children experience them differently. This differentiation seems critical not only in understanding the effects of replacement on child and family functioning but also in understanding which disruptions are best addressed by policies and laws such as the Adoption Assistance and Child Welfare Act of 1980 and which are best addressed with improved social work intervention.

Defining Adoption Disruption

Adoption disruption typically refers to the removal of children from an adoptive placement after children are

officially placed in the home and before the adoption is finalized in court. This definition does not include disruptions occurring after court finalization of the adoption, which usually are termed adoption "dissolutions".

Adoption disruption is typically treated as a dichotomous outcome variable in the professional literature with researchers then determining and reporting the proportion of children experiencing disruption in a sample. Unfortunately, like foster care replacement, adoption disruption is difficult to measure, which is due, in part, to inadequate operationalization of the construct "disruption". This is especially evident in the case of "fost-adopts"⁹. For example, some foster parent adoptions proceed in a manner similar to traditional adoptions. There is an adoptive placement agreement and/or, depending on the state, court paperwork indicating the foster parents' intent to adopt is filed. This is then followed by an appropriate supervisory period, usually six months to a year, before a court of competent jurisdiction issues a decree of adoption. Others may proceed directly to court finalization once the

⁹. The term "fost adopt" refers to the adoption of children by their foster parents once they are legally free to be adopted and the eventual adoption is considered to be in the best interest of the children. Fost-adopts can be beneficial in that they often result in one less move for the child, and they may be more stable than traditional adoptions. There are also disadvantages to fost-adopts. The primary disadvantage is that the child's needs in the long run may not have been matched with the parent's abilities up front because the placement is often initially considered to be temporary.

decision to adopt has been made or parental rights have been terminated, with time spent in foster care counted as the supervisory period. Thus, a disruption may be counted as a foster care replacement or an adoption disruption depending on how it is perceived by caseworkers, administrators, parents, children or the researchers gathering data.

Since foster-adopts currently make up an estimated 60% of all adoptions (cited in Anderson, 1990), it is probable that inconsistencies in classification will influence research findings. For example, there is some evidence to suggest that foster-adopts tend to be more stable than so called "traditional" adoptions (Barth & Berry, 1988; Rosenthal, et. al, 1988). This could simply be a by-product of classification inconsistencies. With traditional adoptions, disruptions can only be considered adoption disruptions. With foster-adopts, disruptions can be considered replacements or disruptions. On the other hand, some have hypothesized that foster-adopts are more stable because foster parents have, in essence, an opportunity to "try out" the match before committing to adoption. Traditional adoptions do not provide this opportunity. Thus, samples with a high proportion of foster parent adoptions (as is often the case with samples from public agencies) may appear to have low disruption rates when results in fact reflect that a high proportion of foster parents were included in the sample. The problem is compounded by the fact that most studies

reviewed for this dissertation do not provide the reader with information about the proportion of foster-adopts in the sample.

Although independent or private adoptions have been estimated to constitute almost one-third of all adoptive placements in the United States (31% in 1986) (Stolley, 1993), researchers have virtually ignored the rates of disruption experienced by this population. This is probably because independent or private adoptions are "hidden" in the sense that court records are sealed in most states, and parties involved in private adoptions do not typically come in contact with agencies, the primary source of information about disruption for researchers.

It is also important to note that adoption disruption and adoption dissolutions are different terms for what may essentially be the same phenomena. They may be differentiated in the literature because dissolutions are difficult to study¹⁰, they each have different legal ramifications, or some other reason that has nothing to do with the child and family dynamics important to researchers and practitioners. Thus, without adequate justification for distinguishing "disruptions" from "dissolutions", we may someday find that we have an incomplete picture of adoption

¹⁰. In the case of adoption dissolutions, children may leave the home in ways that do not come to the attention of the placing agency (i.e. run away, come under the care of another agency).

breakdown because only disruptions that occur early in the placement process are considered under current definitional restrictions.

Construct Validity

The inability to arrive at an adequate definition of foster care replacement and adoption disruption illustrates the difficulties involved in attempting to achieve an adequate degree of construct validity in the research reviewed for this dissertation and, for that matter, most research in the social sciences. According to Cook and Campbell, construct validity refers to the "approximate validity with which we can make generalizations about higher order constructs from research operations" (p.38) (1979). In essence, construct validity requires researchers to ask whether they are measuring what they think they are measuring and whether they can generalize from their operational definitions to a referent construct. For example, have researchers incorporated all the salient dimensions of the construct in their operationalization of it or have they inadvertently incorporated in their operational definition dimensions that are irrelevant to the construct?

Construct validity is an important consideration in the research at issue because it appears as though researchers have not conceptualized foster care replacement or adoption disruption uniformly. Thus, results may differ among

studies depending on how replacement or disruption are defined. For example, Smith and Howard (1991) excluded children with previous disruptions in their study of adoption disruption. In a study of foster care replacement, Olsen (1982) only examined children in care who were not expected to return home, excluding children with permanency plans from the analysis. Barth and Berry included 16 adoption dissolutions in their sample of 926 adoption disruptions (1988). Stone and Stone (1983) excluded foster children in their study who disrupted less than 60 days into the placement and later than eighteen months after placement. Rosenthal, et. al (1988) included five adoption dissolutions and four relative placements in their sample of 27 children experiencing 62 adoptive placement failures. Finally, as was noted above, many samples included fost-adopts to varying degrees. It is possible that samples utilizing a larger proportion of fost-adopts would report lower disruption rates and be more likely to report significant findings on factors correlated with fost-adopt success.

The purpose of this discussion is not to resolve the issue of what constitutes an adequate definition of adoption disruption and foster care replacement but to point out areas where the definitions used by researchers may, in Cook and Campbell's terms, contain "construct underrepresentation" or "surplus construct irrelevancies"

(p. 64) so that the reader can be cognizant of them when comparing study findings (1979).

External Validity and Sampling

External Validity

Cook and Campbell (1979) define external validity as "the approximate validity with which conclusions are drawn about the generalizability of a causal relationships to and across populations of persons, setting and times" (p. 37). Generalizing to a population requires that the population be known and usually can only be achieved with data from large-scale surveys utilizing probability sampling techniques. As we will see, neither of these conditions is easily met in research investigating adoption disruption and foster care replacement. Generalizing results across populations involves assessing how results hold for subpopulations of the target population of interest. For example, do results hold for children of different ages or racial and ethnic groups? Conducting research for the purpose of generalizing across populations is much more common and, as Cook and Campbell note, can be useful in establishing external validity (1979). Nevertheless, non-probability samples (i.e., samples of convenience), which are the primary source of data on adoption disruption and foster care replacement, leave researchers unsure about what population they are generalizing to or across.

Sampling Foster Care and Adoption Populations

To date, no comprehensive data exists from which the number of children in foster care in public and private agencies within the United States can be reliably tabulated. Likewise, there is no comprehensive data on the total number of children placed in adoption through public, private and independent intermediaries in the United States. Most of what we know about failed foster and adoptive placements is based on information extracted from various surveys and research studies, which use different sampling frames and sampling methodologies. Since we do not know precisely what the population of children experiencing adoption disruption and foster care replacement truly looks like in terms of age, behavioral characteristics and so forth, researchers can never be sure how closely their samples approximate population values. Nevertheless, some researchers such as Barth and Berry (1988) and Pardeck (1984) have been able to extract data from case records on large subpopulations of children (i.e., children in the custody of public agencies and/or in a specific geographical area) in foster and adoptive placements. These larger and more heterogeneous studies may provide the best estimates of the characteristics of children in foster care and in adoptive homes.

How Sampling Affects Obtained Results

As Tables 1¹¹ through 4 indicate, obtained results on many aspects of foster care replacement and adoption disruption varied considerably between studies reviewed for this dissertation. Differing results may be explained, in part, by the use of differing sampling procedures and sampling frames. First, studies using samples from private agencies may obtain different results than studies relying on samples from public agencies. Children in the custody of private agencies are often younger than children in the custody of public agencies, and they are often in care because of a voluntary termination of parental rights¹². Children in the custody of public agencies are more apt to enter care because of abuse or neglect. Private agencies that "vend" their facilities to public agencies for foster care or other types of custodial care have a population of children who are similar to that of a public agency assuming they vend services to children of all ages and special needs and do not specialize in serving a subpopulation of children. In addition, studies relying on data from vendorship agencies may not have complete information about the number of moves a child has experienced before coming

¹¹. All tables and figures may be found in the appendices.

¹² Only public agencies can involuntarily terminate parental rights. Children who are relinquished voluntarily tend to be younger.

under the agency's care or after the vendorship contract has ended. For example, there is evidence to suggest that a child's age and prior history of abuse are positively correlated with disruption. Thus, samples containing younger children entering care under voluntary conditions may produce a different picture of the extent of and patterns of disruption than samples containing older children entering care because they have been abused or neglected. This is true even with the larger scale surveys presented in this dissertation, as they tend to sample children in the care of public agencies.

In recent years, there has been a push to place children in adoption who may not have previously been considered "adoptable"¹³. The Adoption Assistance and Child Welfare Act of 1980 appears to have changed our nation's thinking about the adoptability of children, as it mandated a series of activities by public agencies and courts designed to move children out of long-term foster care and into permanent homes. Thus, children who are older may be more apt to be placed in adoption in the 1990's than they were in the 1970's. Since increased age is associated

¹³. Children older than the age considered desirable by most adoptive families and those with physical, developmental and emotional disabilities were often considered "unadoptable" prior to the permanency planning movement personified by the passage of the Adoption Assistance and Child Welfare Act of 1980. Children with these characteristics are commonly termed "special needs" children.

with an increased probability that a child will experience an adoption disruption, research conducted in recent years may depict higher disruption rates than had earlier research. Whether the disruption rate has increased as a result of these policy changes is difficult to assess from the research reviewed for this dissertation because of the possible interaction between child age and type of agency placement with the year of placement.

Adoption is a relatively rare occurrence. According to the National Center for Health Statistics, only about 2% to 4% of families include an adopted child (as cited in Stolley, 1993). It follows that adoption disruption is also a relatively rare occurrence. As such, it is often difficult for researchers to obtain large enough samples to make meaningful generalizations to or across any population. Much of the adoption research reviewed for this dissertation is plagued with small sample sizes bringing into question the generalizability of many studies. This is especially problematic when researchers have attempted to estimate adoption disruption rates. This is because estimates of disruption rates from small samples are more likely to involve sampling error and are less likely to project the true population proportion.

Only one study reviewed for this dissertation relied on a large enough sample to make meaningful generalizations. Barth and Berry (1988) obtained a sample of 927 children in

the care of public agencies in California in their study of disrupted and intact adoptive placements but were only able to obtain basic demographic information about the children in their sample from a review of case records. When the researchers attempted to provide a more in-depth look at the causes and antecedents of adoption disruption from interviews with caseworkers and families, their study was plagued by an extremely high non-response rate. The researchers were forced to use data from children in other parts of the state and oversample high-risk children to boost sample size. Although the researchers wanted to interview both the social worker and the family, they were only able to interview either the social worker or the family in 120 cases, limiting the confidence in the generalizations that can be or were made from the more in-depth information obtained from the interview process. Nevertheless, for the reader who is interested in an estimate of adoption disruption rates, the first phase of the Barth and Berry study (1988) provides probably the most accurate estimates of any study reviewed, albeit on a population of children in care in public agencies in California.

Although samples for the studies on foster care replacement examined for this dissertation were considerably larger, much representativeness was lost in the elimination of cases to fit the research hypotheses. For example,

although Olsen (1982) had access to a sample of 2,220 children in care, she elected to focus only on those children whose plan was long term-foster care or adoption in her analysis of the foster care experiences of children not expected to return home. Thus, her reported rates should only be interpreted in light of the sample she used. Probably the most representative sample was used by Pardeck (1984) who analyzed results from a national study of 319 public social service agencies in 38 states, describing the foster care experiences of 4,288 children.

Internal Validity, Study Design and Analysis

Internal Validity

According to Cook and Campbell (1979), internal validity refers to the "approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of cause" (p. 37). True experimental designs are the strongest designs for inferring causation because random assignment of subjects into treatment conditions rules out most threats to internal validity. Unfortunately, experimental designs are extremely rare in field research. Quasi-experimental designs are somewhat more common and offer some basis for inferring causation assuming that salient threats to internal validity can be ruled out either by the design of the study or the analysis of trends in the data.

Unfortunately, researchers conducting field research

are often unable to manipulate an independent variable or variables as required with quasi-experimental designs and, thus, must use variables as they occur naturally in the environment. These correlational designs do not offer researchers the opportunity to attempt causal analysis, as neither random assignment into treatment conditions nor manipulation of the independent variable(s) has occurred.

Study Designs for Foster Care Replacement and Adoption Disruption Research

As can be seen in Tables 1 and 2, only two studies reviewed for this dissertation used quasi-experimental designs. Both investigated the influence of specialized placement services on foster care stability. Most studies on foster care replacement and adoption disruption were correlational studies. Neither random assignment into treatment conditions nor manipulation of the independent variable(s) occurred. Researchers, for the most part, extracted correlational data from subpopulations of children and attempted to find a relationship between unmanipulatable variables (such as age or race) as they occur naturally in the environment and placement instability. These studies are the weakest for inferring causation. They are also the weakest for improving casework practices because there is little social workers can do about altering variables such as age and race once they are identified as correlates to placement instability. One may argue that this knowledge is

still useful, since it can assist workers and administrators in identifying placements more at risk of foster care replacement and adoption disruption; however, as will be seen in the following discussion of factors found to be linked with placement instability, high multicollinearity between variables and small effect sizes make prediction difficult and most likely hazardous.

In the absence of true experimental or quasi-experimental designs, longitudinal research is the preferred method of obtaining information about foster care replacement and adoption disruption because this design allows detection of patterns in the number and types of moves that children experience. Longitudinal research also allows researchers to support causal assumptions by establishing a temporal order to events.

Ideally, longitudinal research on foster care replacement would follow foster children from the time they enter care until the time they leave care so that any pattern of placement failures and successes can be observed and instances where children may be more vulnerable to disruption (i.e., certain ages or phases of the placement) can be detected. Unfortunately, longitudinal research in foster care is rare because it often takes years for children to matriculate through the child welfare system and because it is an expensive undertaking.

Reported rates of foster care replacement would also be

expected to fluctuate depending on the length of the follow-up period. It is possible that some children may be more susceptible to replacement early in the placement process while others may be more at risk at later stages in the process. Thus, results relying on shorter data collection periods may portray replacement differently than data from longer study periods. Researchers and practitioners commonly believe that children who are going to experience a replacement or disruption will do so early in the process, so it is unnecessary to follow them for long periods of time. This may not be a clear-cut as one would like to believe. Pardeck's analysis of foster care replacement supports the notion that placements tend to become more unstable after a child has been in care longer than three years (1984), indicating that length of time in care may be a factor in identifying risk of disruption. On the other hand, Taber and Proch present evidence to suggest that older children tend to have shorter stays in placements; thus, age would be a better predictor of replacement than the length of time the child has been in care (1987). In short, in the absence of long-term longitudinal research, until researchers can ferret out whether children are more susceptible to foster care replacement the longer they have been in limbo awaiting permanency or are more susceptible to replacement during some developmental stage (i.e., adolescence) or whether these variables interact to form a

pattern of predictable disruptions, one will not know whether longitudinal studies following children for one to two years (as is most often the case) portray an accurate picture of replacement rates and risk factors.

Since the definition used by most researchers for adoption disruption only requires that children and families be followed until court consummation of the adoption (usually within six months to one year of placement), longitudinal research is not nearly as problematic with adoption disruption as it is with foster care replacement. However, it is important to note again that the shorter follow-up period in adoption disruption research is merely a byproduct of definitional constraints. Without more research into the long-term success of adoptive placement, one cannot be certain how long adoptions should be followed to obtain an adequate picture of placement breakdown. Additionally, Festinger (1984) notes that, since adoption is a relatively rare occurrence, the data collection phase of adoption disruption research could be quite lengthy, as it would take some time to gather a large enough sample to engender confidence in results.

Recently, Wulczyn (1996) has raised another issue in regard to the use of longitudinal data. He notes that following a sample over time to develop a longitudinal perspective of change does not alter the cross-sectional nature of the *sample*. In short, longitudinal research

designs do not preclude the cross-sectional nature under which the sample has been drawn. Children who have been in placement for longer periods of time will continue to have a tendency to be overrepresented in a longitudinal sample as they would in a cross-sectional sample.

Some researchers have attempted to solve the problems inherent in collecting longitudinal data prospectively by using case records and other agency data to reconstruct the placement patterns of children retrospectively. In the case of rare occurrences, retrospective designs require fewer resources than prospective designs, and they allow researchers to obtain a sufficient sample from which to make more meaningful inferences. However, this design also has limitations, primarily because researchers often rely on information obtained from case records and/or interviews with caseworkers. Case records may be incomplete, and caseworker memory may be faulty depending on the length of time that has passed since the case was active or the amount of caseworker involvement in the case (Barth, et. al., 1994). For example, Proch and Taber (1987) found that information regarding the whereabouts of some children in their sample was missing from records. This may have resulted in an attenuation of foster care replacement estimates in this study.

Probably the most inappropriate use of retrospective research designs is in situations where foster and adoptive

parents experiencing disruption are asked to provide information regarding child and family problems that may have contributed to the disruption and where caseworkers are asked to retrospectively evaluate the reasons for the breakdown. Disruption is a painful and emotionally charged event. It is very possible that child, family and caseworker behaviors may be evaluated differently as those affected by disruption look back on the event.

Cohort designs, which would compare children in care at one time period with children in care during another time period, are also an option for use in research on foster care replacement and adoption disruption. However, cohort designs tend to be weak for selection and history threats to internal validity (Cook & Campbell, 1979). One researcher has attempted a modified cohort design. Festinger (1986) used what she termed a "wrap-around" approach to data collection. Data were first collected as a cross-sectional design, but to assure that children in placement for shorter periods of time were not underrepresented in the sample, Festinger substituted placement histories of children who had been in placement for the period of time missing from each case. Thus, a child who had been in placement for eight months was matched with a child who had been in care for 12 months, and the "history" of the cases was examined.

Some studies use cross-sectional designs to examine placement instability; however, in the case of foster care

replacement research, this technique may result in an overrepresentation of children who have been in care for longer periods of time. Thus, results from cross-sectional designs may point to higher disruption rates than would be expected in the population. To the extent that other child characteristics are related to disruption, these characteristics (i.e. age) will also be overrepresented in a cross-sectional sample (Wulczyn, 1996). Although the relatively short supervisory period in adoptive placements would eliminate this problem for researchers investigating adoption disruption, it is unlikely that researchers would have a large enough sample size to consider cross-sectional research unless the research were conducted on a national or state-wide basis. Also, cross-sectional research does not allow researchers to easily establish a temporal order to events. This temporal order is an important requisite in establishing causality (Cook and Campbell, 1979).

Survival analysis, also termed event history analysis, is a promising technique that has not yet been used in research studying foster care replacement or adoption disruption. Borrowed from the field of biostatistics, where researchers have been interested in modeling length of time to death, and engineering, where researchers have been interested in studying length of time to the failure of machine components (Luke, 1993), survival analysis has been used in recent years to describe and predict occurrences in

the field of social work. For example, some researchers have used survival analysis to study length of time in care, which has been subject to some of the same limitations as foster care replacement when studied using traditional data collection methods (Barth, et. al, 1994). Unfortunately survival analysis has not yet been used to study foster care replacement or adoption disruption.

Survival analysis is actually a family of techniques concerned with examining the existence and determinants of change (Luke, 1993). This is done by modeling an unobservable or latent variable, called a "hazard rate" or "hazard function", which is defined as the probability that a person or object will experience an event or make a transition (Barth, et. al, 1994). The dependent variable is comprised of two pieces of information: the "event time" and "event status". Event time provides information about the subject's time to event (i.e., time to disruption). Event status indicates whether the event of interest has occurred (i.e., did a disruption occur) (Luke, 1993). Survival analysis is so powerful because it is able to take into account situations where data are "censored". In other words, survival analysis is able to provide researchers with information about cases when data are incomplete. This is especially useful to studies of foster care replacement where children leave care before experiencing a disruption.

Survival analysis also has several other strengths.

With traditional data gathering techniques, findings regarding the percentage of children experiencing a disruption and the mean time to disruption are dependent on the time frame of the study. That is, the longer the study period, the greater chance a child will experience a disruption. By taking into account "censored" data, survival analysis addresses this problem. Survival analysis can also be used on data obtained in a variety of ways, including prospective, retrospective, archival and cross-sectional studies (Luke, 1993). Finally, in traditional longitudinal studies, summary statistics are usually provided about the number of children who disrupted at different points in time in the study and/or the proportion of children who have experienced a disruption. For example, in the five-year longitudinal study of the status of children in foster care conducted by Fanshel and Shinn (1979), 42% of the sample children experienced only one replacement in the five year period, and approximately 20% of the children discharged during the fourth year and after experienced four or more placements. This data analysis does little to further understanding about when children are more likely to disrupt and what types of children tend to disrupt quickly; whereas, survival analysis has the power to do so.

Tables 1 and 2 provide information about the type of design used in the research reviewed. The reader is advised

to attend to whether the design was retrospective, longitudinal or cross-sectional when attempting to evaluate foster care replacement and adoption disruption rate estimates, as these estimates may vary as a function of study design.

Data Analysis

Researchers have employed various statistical techniques in analyzing their data on foster care replacement and adoption disruption. Some of these techniques are clearly better than others. For example, in the absence of experimental controls, simple tests of differences between means or proportions do not allow the researcher to hold constant variables that theoretically may influence the outcome variable. For instance, increased age has rather consistently been found to be related to both replacement and disruption. If age is not matched initially in disrupting and intact placement groups or is not controlled for statistically, it is likely that one group under study will be older than the other and, thus, experience more disruptions regardless of other variables under study. Matching is an inefficient technique, as it is never possible to account for all variables posited to influence the outcome variable (such as the proportion of foster-adopts in the sample, the number of previous placements or other factors found to influence placement instability).

The use of OLS multiple regression to study the

relationship between variables and to build models is inappropriate when studying foster care replacement and adoption disruption. This is because the outcome variable (usually measured by counting the number of moves a child has experienced) is skewed, as most children experience fewer than three moves. Skewness in the dependent variable violates two of the primary assumptions in regression analysis: homoskedasticity and normality of variable distribution¹⁴.

Groze (1996) and Rosenthal, et al. (1988) analyze data using logistic regression, a Maximum Likelihood Estimation (MLE) procedure. Logistic regression sidesteps the problems associated with using OLS regression with a skewed variable although some information can be lost by treating the outcome variable as dichotomous (i.e., disruption/no disruption). Poisson regression, another MLE procedure based on the Poisson distribution rather than the normal distribution, lends itself quite well to modeling the occurrence of ordered events, such as the number of moves without the limitations of dichotomizing the outcome variable. In essence, Poisson regression allows researchers to estimate the probability associated with an event of interest, and it is used for modeling failure rates (i.e.,

¹⁴. In general, violation of critical assumptions in any statistical test can inflate Type I or Type II error rates, depending on the type of test being used and the type of violation, leaving results prone to inferential errors.

disruption) (Kilenbaum, et al., 1988). Unfortunately, Poisson regression was not attempted in any of the research reviewed. Finally, as previously discussed, analytical techniques associated with survival analysis, although not yet applied to this field of research, are potentially potent approaches to studying disruption.

Tables 1 and 2 provide information about the data analysis techniques employed by researchers examining foster care replacement and adoption disruption. In general, the stronger studies will allow for the incorporation of multiple independent variables, an especially important tool to use with studies which are merely correlational in nature.

Statistical Conclusion Validity

According to Cook and Campbell (1979) statistical conclusion validity refers to "inferences about whether it is reasonable to presume covariation given a specified alpha level and the obtained variances" (p. 41). An important part of statistical conclusion validity involves determining whether a study is sensitive enough to permit reasonable statements about covariation (Cook & Campbell, 1979); or, in other words, whether the study has enough power to detect covariation if it does in fact exist. Small sample size is a key factor that contributes to low statistical power.

As can be seen in Tables 1 and 2, many of the studies reviewed were plagued with small sample sizes. For example,

Walsh and Walsh (1990) examined fifty variables simultaneously with a sample of 51 foster care cases. To have detected a medium effect size (.30) for R with a power of .80 and alpha set at .05, they would have needed 356 cases¹⁵. To have obtained a medium effect size on any one bivariate correlation with a power of .80 and an alpha of .05, they would have needed 84 cases. This may be why Walsh and Walsh did not report the results of significance tests in their study but instead elected to report only those independent variables that correlated with the outcome variable .35 or greater. It is also important to note that non-significant results in studies relying on small sample sizes, such as the one described here, whether they report the results of significance tests or not, should be interpreted with caution, as there may not have been enough statistical power to detect even medium or large effect sizes.

Statistical conclusion validity also involves what Cook and Campbell term the "fishing and the error rate problem" (1979). This problem occurs when multiple statistical tests are conducted without acknowledgment that as more tests are conducted the chance of committing a Type I error increases. Briefly, with multiple tests, there is

¹⁵. Cohen suggests that .80 be used as a convention for power (cited in Cohen & Cohen, 1983). Correlations of .10, .30 and .50 are considered to be conventions for small, medium and large effect sizes (Cohen & Cohen, 1983).

an increased likelihood that variables will be found to be significantly related, due simply to chance, when, in fact, they are not related. For example, Stone and Stone (1983) studied 64 children in foster care at three child welfare agencies in a Southwestern state. They looked at 63 variables utilizing multiple regression and found eleven of the 63 variables to be statistically significant ($\text{Alpha} < \text{or} = .05$).

There are several statistical procedures that are specifically designed to guard against inflated Type I errors when multiple comparisons are made (i.e., Tukey HSD and Bonferroni tests). One procedure, recommended by Cohen and Cohen (1983) is rather simple. The "Fisher's protected t" test involves computing an overall F test on all variable means tested in the model. If the F test is not significant, no individual tests of significance are conducted. Stone and Stone did exactly the opposite of this. They first tested individual comparisons on all 63 variables and then included only those that were significant ($\text{alpha} = .05$) in their regression model. When studies making multiple comparisons do not guard against committing a Type I error, one should be skeptical about the viability of variables found to be significant.

Finally, unreliability in the measurement of variables can also compromise statistical conclusion validity by reducing statistical power. This is because unreliability

can inflate standard errors of estimates (Cook & Campbell, 1979), making it more difficult for significance tests to detect true variable effects. Unfortunately, the extent to which measurement unreliability is a problem is unknown for most studies reviewed, as reliability estimates are not reported.

Examining Foster Care Replacement Rates

Several researchers have attempted to discern foster care replacement rates from studies of children in care. There was considerable variability in obtained rates, most likely because of differing sampling methods and study designs.

Olsen (1982) conducted an eighteen-month longitudinal study of 566 Ohio foster children who were not expected to return home and found that these children experienced a mean of three placements while in care. As part of a longitudinal study of 187 children between the ages of 2 1/2 and 14 years in care in the Connecticut Department of Human Services who moved into permanent placements between July, 1978 and March, 1980, Fein, et al. (1983) found that 50% who were placed in long-term foster care disrupted within 16 months of placement. However, results should be interpreted with caution, as this study had only a 26% response rate in the first interview phase of the study, and 56 additional cases were lost between the first and third interviews. The most common reason given for attrition was caseworker

refusal to obtain necessary information. The final analysis of long-term foster care failure was based on a sample of 14 children.

Pardeck (1984) analyzed data from the 1977 National Study of Social Services to Children and their Families, a cross-sectional survey of 319 public social service agencies in 38 states that reported on 4,288 children in foster care. Pardeck found that 78% of children had experienced only one or two placements while in care (median length of time in care was 29 months).

In addition, in a five-year longitudinal study of 624 New York City foster children aged birth to twelve years, Fanshel and Shinn (1979) found that 72% of the children studied had experienced only one or two placements; however, as noted by Fanshel and Shinn, this proportion was directly related to length of time in care. For example, only 2% of the children discharged in the first year of the study had three or more placements; whereas, about one-fifth of the children discharged during the fourth and fifth years of the study had experienced four or more placements.

Staff and Fein (1995) studied all 244 children served by Casey Family Services in their treatment foster care program¹⁶. These special needs children were accepted into

¹⁶. Treatment foster homes, also known as therapeutic foster homes, are family placement alternatives for children with emotional and behavioral problems which make placement in traditional foster family homes more difficult. Based on a review of treatment foster care literature, Dore and

the Casey program only after reunification and adoption options were ruled out by the referring agency. These children were between the ages of five and thirteen. The median length of time the children were with Casey was three years. At the end of the study period, eighty three cases were closed (i.e. adoption, emancipation) and 161 children were still being served. Fifty-one percent of the closed cases and 49% of the open cases were still in the same foster home at the end of the study period. On the other hand, 11% of the children whose cases had been closed and 12% of the children who continued to receive services at the end of the study period had experienced five or more placements.

Staff and Fein's (1995) study is unique in that it takes a cursory look at the number of children moving to more restrictive settings and at how many of those children are able to return to a family setting. They found that over 70% of the children served by Casey had been placed exclusively in family settings. However, 20% (n = 49) of the children had experienced one or more placements in a hospital or residential facility. Of the children for whom

Eisner (1993) cite (1) a focus on rehabilitation rather than maintenance, (2) the implementation of an individualized treatment plan, (3) participation of foster parents as part of the treatment team, (4) payment of higher board rates to foster parents, and (5) the provision of special training and support services to foster families as factors that routinely differentiate treatment foster care from traditional foster care.

a follow-up decision regarding placement was made by the time the study was completed¹⁷, 40% were immediately placed in another facility while 25% were able to return to a family setting upon discharge. Only 36% of the children were returned to a family setting at some point in the study period. As will be discussed later, changes in placement restrictiveness may be a notable factor in determining whether a placement is considered a success or a failure by workers, courts, and researchers. This typology would be a marked change from the traditional method of merely counting the number of placements and considering them all disruptions.

Finally, in a study of children under the supervision of three child welfare units in a mixed urban-rural area in a Southwest state, Stone and Stone (1983) reviewed case records for 64 children, aged 3 1/2 and older, who had been in a foster placement over sixty days and less than 18 months. They found that 48.5% of the children were removed from the foster home before completion of the agency plan.

One study was identified that suggests that foster placements are relatively stable. Lawder et al. (1986) found that 93% of the children in foster care in a private agency experienced two or fewer placements while they were in care. Furthermore, of those in care over five years,

¹⁷. The authors do not indicate how many children had received follow-up decisions regarding placement in another setting.

almost three quarters had only one or two placements. Although these findings may seem compelling, results should be interpreted with caution, as it is not clear from the study what proportion of children were in the custody of the private agency or in the custody of a public agency under a vendorship agreement with the private agency. If most of the children in the sample were in the custody of the private agency, they were more likely to have been infants voluntarily placed by birthparents, and thus not representative of the population of children in the child welfare system.

Some evidence also suggests that there is wide variability in the number of moves that children experience while in care. In other words, some children experience relatively stable foster care placements while others experience a high number of replacements. For example, while the children in Olsen's study only experienced a mean of three placements, the number of placements ranged from one to twenty-one (1983). With a reported mode of two placements, it is likely that the majority of children experienced two or three placements, however. Kavalier and Swire (1983) cite information obtained from the Temporary Commission of Child Welfare in New York States in 1978 which found that over 10% of children had been placed in five or more homes. This is comparable to Staff and Fein's (1995) study where 11% of children in therapeutic foster care

experienced five or more placements. Likewise, Fanshel and Shinn (1979) found that 12.7% of the children discharged in the first two years of the study had experienced three or more placements.

In a study of placement histories of 87 children referred to specialized placement services through the Illinois Department of Children and Family Services because of placement instability, Proch and Taber (1987) found that this high risk sample experienced a combined total of 746 placements (mean = 9, median = 8). Of particular interest in this study is the fact that the children did not seem to have moved at regularly spaced intervals. Disruptions tended to form predictable patterns. A period of placement stability was usually followed by a series of placements that were shorter in duration, suggesting that once a disruption occurred, children often experienced a period of placement instability, which would sometimes then be followed by another period of placement stability. The authors suggested that many of the placements following a disruption may have been emergency placements, implying that workers have little warning before being asked to remove a child. Disruptions also tended to occur more frequently with older children regardless of the age at which the child first entered care. The study also found that placements tended to become more restrictive and to last for shorter

periods of time¹⁸.

As was mentioned previously, cross-sectional studies (i.e., Pardeck, 1984) may overrepresent the number of moves that children experience because children in care for longer periods of time have a greater chance of being sampled. Studies relying on special needs or high risk samples (i.e., Proch & Taber, 1987) may also tend to overestimate the number of moves children experience. Arriving at an estimate of how often children move is nearly impossible from the data reviewed for this dissertation. Even if we could, the variability in the number of placements indicates that we would probably not accurately portray foster care replacement. Furthermore, until we better understand the pattern of moves, we cannot make sound judgements about whether reported rates are problematic and thus should be reduced through agency, court or policy intervention or if

¹⁸. Some evidence suggests that there is no guarantee a more restrictive placement will meet the needs of the child. Proch & Taber (1987) found that 46% of the institutional placements lasted less than two months in their sample of hard to place children. Also, in a comprehensive review of residential treatment centers, Wells concluded that placement criteria were often vague, and there was some question about whether the institutions were more "restrictive" than foster homes (1991). Wells also found that there was generally no consensus on what types of children are best served in residential treatment centers (1991). Likewise, in a study of group home care in California, Barth, et al. (1994) concluded that staff were generally young, poorly paid and highly mobile, with a 50% turnover rate per year. Clearly, more research should be conducted to ascertain whether sending children to more restrictive settings reduces the chance that they will experience a disruption.

they are merely an unfortunate, and unpreventable, casualty of permanency planning.

Examining Adoption Disruption Rates

In the literature reviewed for this dissertation, adoption disruption rates ranged from 2.8% to 53%. As with studies of foster care disruptions, the wide variability in reported rates reflects variability in sampling and study designs, except that no study reviewed on adoption disruption was cross-sectional in nature. All but one study collected data after the customary six-month to one-year supervisory period, after which most adoptions either disrupt or are finalized in court. The reader is reminded that placements severed after court finalization of the adoption are considered "dissolutions" and are not counted in disruption figures with a few noted exceptions.

In a study of 91 adoptions at a private agency in a large Southwestern city specializing in "special needs"¹⁹ adoption, Groze (1986) found a disruption rate of 14.3%. Unfortunately, Groze did not specify how cases were selected. Utilizing a retrospective study design, Kagan and Reid (1986) studied 78 special needs children placed for adoption between 1974 and 1982 by Parsons Child and Family

¹⁹. Although the term "special needs" can be interpreted differently by policy-makers and researchers, the term most often refers to children who are older than the age most often considered by adoptive parents, children from minority groups, children who are part of sibling groups and children with emotional, developmental and/or physical disabilities.

Center in Albany, New York. They found that 53% of the children disrupted in at least one placement, but 71% of the children experienced legally finalized adoptions during the time period of the study. In a retrospective study of 2,148 children adopted by non-relatives and born outside the Netherlands, Boer et. al. (1994) found a 2.2% disruption rate for children adopted alone and 3% disruption rate for children adopted with siblings. This study had a response rate of only 61%, although the researchers reported that the sample differed from the population only in that girls were overrepresented in the sample.

In a study of 926 children adopted in Northern and Central California, Barth et. al. (1988) found a disruption rate of 10.2%; however, their study included adoption dissolutions. If only adoption disruptions were included in the calculations, the disruption rate would be 8.2%. Westhues and Cohen (1990) found a disruption rate of 12% in an examination of a population of 58 families who adopted special needs children from one of five Childrens Aid Societies in Southern Ontario. Kadushin and Seidl (1971) examined disruption rates of 2,945 children adopted through the Wisconsin State Department of Family Services between 1960 and 1967. They reported only a 2.8% disruption rate. In a study of 897 children listed with the Child Welfare Information Services in New York City who were subsequently placed for adoption, Festinger found that 8.2% of the

children disrupted within 12 months of placement (1986). One of the limitations of the study was that, by the end of the 12-month data collection period, only 46.2% of the children had been legally adopted. The outcome of nearly half of the cases had not been decided.

Factors Related to Foster Care Replacement:

Who is Disrupting and Why

Many of the studies reviewed identified risk factors that may make some children more susceptible to foster care failures. A summary of these findings is presented in Table 3.

Age

Age has consistently been found to be associated with increased risk of foster care instability (Proch & Taber, 1987; Olsen, 1982; Pardeck, 1984; Taber & Proch, 1987;). In fact, the mean age of children in the three studies reporting the highest replacement rates were 16 years (Proch & Taber, 1987), 10.3 years (Olsen, 1983) and 8.7 years (Stone & Stone, 1983). Unfortunately, the mean ages of children in studies reporting the three lowest rates of foster care replacement were not reported; thus, comparisons cannot be made across studies.

Pardeck (1984) further analyzed age by controlling for time in care (less than three years or more than three years in care). He found that age was not associated with increased risk of placement failure during a child's first

three years in care but that it was a significant predictor of replacement after three years in care.

Emotional/Behavioral Problems

The presence of emotional or behavioral problems has also been associated with increased risk of disruption. Maas and Engler's study of foster children in eight U.S. communities was among the first to systematically document the link between the presence of an emotional disturbance and increased replacement (1959), although this finding was based on the analysis of qualitative data. Several later studies replicated these findings through more quantitative treatment of data, although no study has adequately, or even consistently, operationalized and measured the construct "emotional and/or behavioral problems". For example, Olsen (1982) found that children with social or emotional problems averaged one more placement than those who did not display social or emotional problems (assessed as part of a questionnaire given to caseworkers). In a retrospective study of 200 children who had remained in care until emancipation at adulthood, Palmer (1979) also found a link between behavior problems as measured on a three-point scale ("serious", "present, but not serious" and "none") and replacement. Stone and Stone (1983) found the "relative absence of aggressive behavior" on the part of the foster child, determined by reviewing case records, to be significantly associated with decreased risk of foster care

failure. Unfortunately, this study did not specify how "relative absence of aggressive behavior" was operationalized. Fein, et al. (1983) found that the child's emotional and developmental functioning, measured on a scale from 1 to 4 (1 = poor to 4 = very good), was significantly associated with increased risk of disruption.

Finally, in their sample of 624 New York foster children, Fanshel and Shinn (1978) also found that children whose behavior was characterized as deviant or hostile on the Child Behavioral Characteristics (CBC) scale experienced more replacements than their non-symptomatic counterparts. This also held true for children rated as more unmotivated and withdrawn on the CBC between the second and third administrations of the measure (between 2 1/2 and 5 years after entry into care). Of special interest is that the behavioral difficulty experienced by children in their sample, captured by the use of several projective and objective measures, also generally increased with age and length of time in foster care, especially for children age six or older. Fanshel and Shinn noted that some increased behavioral difficulty could have been related to normal maturational processes. In short, children who are older may be more capable of presenting more aggressive and hostile behaviors. It may also be the case that the hostile behaviors older children engage in may be perceived as more threatening by caregivers and counselors.

Length of Time in Care

Length of time in care also has been associated with increased risk of foster care instability (Pardeck, 1984; Olsen, 1982, Fanshel & Shinn, 1978), with children in care longer experiencing more foster care disruptions. Since age has consistently been shown to be a strong predictor of replacement, age and length of time in care could interact in some way to produce the obtained results. Also, other variables could interact with length of time in care to produce a finding of significance. For example, children who are abused or neglected more seriously may spend more time in care because the home situation is not as easily remedied or because abused and neglected children may exhibit more behavioral problems that would make them more difficult to place. It could also be the case that children exhibiting physical, developmental, emotional or behavioral problems would be in care longer, as it is more difficult to find permanent living arrangements for "hard to place" children. There is some evidence to both support and challenge these hypotheses. Horowitz, et al. (1994) found that children experiencing developmental delays were apt to remain in care longer, and Lawder (1986) found that children with behavioral and emotional problems may spend more time in care. On the other hand, Pardeck found that children with behavioral problems had a greater chance of disrupting, even after controlling for time in care (1984).

Other Factors

Several additional child, family and agency factors have been found to be associated with increased risk for foster care instability. For example, Olsen (1982) found that children in care because of neglect averaged one more placement than children in care for other reasons. Pardeck (1984) found that alcohol abuse on the part of birthparents was associated with placement instability; however, this relationship held only for the mother after controlling for time in care. Alcohol abuse could interact with length of time in care or perhaps behavioral problems. For example, children of substance abusers could be apt to spend more time in care or tend to have more behavioral problems. Pardeck also found higher caseworker turnover to be associated with more replacement but only during the first three years of care and found no relationship between caseworker's educational level or experience and foster care failure.

Pardeck's (1984) findings linking caseworker turnover and replacement deserve more attention, for, if accurate, it seems that higher caseworker turnover negatively effects children by resulting in more moves. However, Goerge posits a different scenario in his (1994) event history analysis of public child welfare worker turnover and discharge from foster care. Using data collected from the Illinois Department of Children and Family Services'

Management Information System, Goerge found that more caseworkers over time on a particular case increased the probability that a child would be reunified with his/her biological parents. As an interpretation of these findings, Goerge posits that cases may be re-evaluated by caseworkers when they are re-assigned. The process of re-evaluation may create the condition where new justification must be made in order to keep a child in foster care. If this explanation were to hold true, the same phenomenon may be occurring with foster care replacement. As cases are re-assigned, caseworkers may re-evaluate them for the purpose of justifying continued placement in a particular setting (i.e., foster home, institution). If the continued placement cannot be justified, the child may be moved. Thus, caseworker turnover may be positive for the child if the new placement is indeed better for the emotional and physical development of that child. This is another reason why it is important to study child reactions to moves. Without this information, it is impossible to know whether increased caseworker turnover and the resulting increase in foster care replacement is beneficial or harmful to a child.

Fein et. al. (1983) found that children who experienced foster care replacement performed worse on emotional and developmental functioning, family adjustment and school functioning measures than those who did not experience placement instability. Additionally, 50% of those placed in

"permanent" (long term) foster homes disrupted. Unfortunately, this study was severely limited by small sample sizes. As noted earlier, this study had a 26% response rate in the first interview (n= 187), and researchers lost an additional 56 children through attrition between the first and third phases of this study. In addition, this study focused on the status of children moving into permanent placements, which included biological, adoptive relative, permanent foster and foster parent adoptive homes, resulting in small cell sizes for each type of placement.

Staff and Fein (1992) studied 134 sibling pairs placed in foster care by Casey Family Services between 1976 and 1990 in a cross-sectional study designed to examine the success of sibling pair placements as compared to placements in which siblings were placed separately. Of the 93 sibling pairs placed together initially, approximately two-thirds remained together. Furthermore, disruption rates did not differ significantly for sibling and single child placements. Of particular interest in this study was the suggestion that placement decisions were made differently depending on the office that placed the children. Although sibling placement policies were the same in all five agency sites, the sites differed rather dramatically in the frequency with which they placed children together initially (ranging from 25% to 81% of siblings placed together).

Novel Studies

Several studies of foster care replacement were especially noteworthy at the time they were published, either because they attempted more comprehensive coverage of replacement or because they used data analytical procedures which allowed the incorporation of multiple independent variables, and merit more in-depth discussion. Probably the most comprehensive study was Fanshel and Shinn's (1978) longitudinal study of 624 New York foster children conducted to assess foster child well-being. Although foster care replacement was not the main focus of the study, the authors were able to examine factors related to replacement by drawing upon a rather extensive selection of variables for which data were collected for the larger study on child well-being. In addition to the variables related to foster care replacement discussed above, Fanshel and Shinn also found that children who entered care because of abuse, neglect, abandonment and family problems experienced more moves while in care than did children who entered care because their parents were unable to care for them. In addition, children whose first placement was in an institution rather than a foster home experienced more replacement.

One of the more innovative relationships examined by Fanshel and Shinn was the small but significant link between parental visiting and foster care replacement. The authors

found that children whose parents visited less often experienced less replacement. Although the relationship was weak ($r = -.13$), it was statistically significant (based on a sample of 577 children). However, it is possible that the results of this comparison were reported incorrectly, as it appears from the coding that children whose parents visited more frequently were less apt to experience replacement.²⁰ Regardless of direction of the relationship, this variable may in the future hold some promise in explaining children's responses toward parental separation. It is commonly believed that parental visiting is disruptive to children who need to establish attachments to new caregivers (i.e., more visiting would be linked to more replacement). It may, in fact, be that visitation has a calming effect on children, thereby allowing them to better cope with out of home placement. Or, it could be simply that better functioning families visit their children more often and

²⁰. On p. 87 of this report (Fanshel & Shinn, 1978), the visiting scale that was used to obtain data is reported. This five point Likert scale measures visitation with no visiting being represented by response number 1. The maximum visiting measured, "child visits parent's home", is represented by response number 5. Thus, as the amount of visiting increases, the score on this scale increases. The dependent variable was the number of placements experienced by the children (p.p. 137-144). By analysis of Table 5.12 (p. 142), it is clear that these data are coded so that "1" would represent one placement, "2" would represent two placements, and so on. The zero order correlation was $-.13$ ($p = < .01$), representing a negative relationship. This means that children whose parents visited more often experienced fewer moves; or, stated differently, children whose parents visited less often experienced more moves.

that better functioning families raise children who are better able to function in a foster family setting. Before any conclusions can be drawn, additional research needs to be conducted not only to establish a relationship between child response to visitation and replacement but also to verify the direction of that relationship. In addition, the use of multiple regression to study replacement may have been inappropriate due to the likely violation of OLS procedures when the dependent variable is skewed²¹. The study also relied on quota sampling techniques, which most likely resulted in inaccurate estimates of replacement rates, thereby hampering the generalizability of results.

In addition to Fanshel and Shinn's study utilizing multiple regression techniques to examine replacement (1978), several other studies examined groups of variables hypothesized to affect foster care replacement by use of OLS regression, path analysis and other more sophisticated statistical techniques that allow for model building of the factors that may contribute to foster care replacement. Most of the variables found to be significant using these techniques (i.e., age, length of time in care) were also found to be significant in the studies discussed above. Olsen (1982) studied several variables hypothesized to affect replacement by the use of path analysis and found

²¹. Maximum Likelihood Estimation (MLE) procedures were not widely used in social work research at the time the study was completed.

that a child's racial background, age, history of social or emotional problems, and the length of time in care either directly or indirectly influenced the number of moves a child experienced while in care. Several variables were demonstrated to have weak indirect effects, including the presence of a physical handicap, dependency, neglect, race and parental ties. These variables accounted for 29% of the variance in the number of replacements experienced by children.

Stone and Stone (1983) found several variables to be associated with increased risk of foster care replacement using stepwise multiple regression. Eleven of the sixty-three comparisons made in the analysis were found to be significant. However, this study had some very serious flaws. Although the researchers stated that all items used in the analysis had an inter-rater reliability of at least .75, it is unclear from the report how each variable was operationalized. Many of the variables are highly subjective, such as "normal attachment," "rapport" and "acute family problems". In addition, the researchers did not control for the increased probability of committing a Type I error with the use of multiple comparisons (63 comparisons in all); and, as discussed earlier, the small sample size ($n = 64$) increased the possibility of a Type II error. Finally, the researchers' use of a dichotomous dependent variable in a multiple regression analysis

probably violated requisite assumptions for OLS regression. Consequently, this study does little to advance our knowledge about groups of predictor variables associated with foster care replacement.

In their study of 51 children in care at the Montana division of the Casey Family Program, Walsh and Walsh (1990) collected various information from case records and caseworkers regarding factors that were related to placement instability. These variables were analyzed (no more than 50 at one time) using OLS regression procedures, with the dependent variable measured as the number of placement changes that children experienced while in care. The researchers found several variables to be predictive of replacement, accounting for nearly 55% of the variance in the dependent variable. The variables found to be related to replacement were not included in Table 3 because the researchers did not report the results of any significance tests, choosing instead to report only those variables found to correlate with the dependent variable at .35 or greater. As discussed earlier, low sample size (i.e., low statistical power) calls into question the ability of any statistical test to detect even a medium effect size.

The study also had some other rather serious flaws. First, no corrections were made for the fact that so many multiple comparisons had been made. Secondly, much of the information collected was rather subjective in nature. No

reliability or validity checks were done on the measures developed and used to measure constructs such as "family functioning", engendering little confidence in results. Finally, as was discussed above, the use of multiple regression with a skewed dependent variable violates the normality assumption necessary to conduct such a test. Although the researchers report an Adjusted R^2 of .74, with the relatively small sample size, the standard error was most likely quite large, resulting in a large and imprecise confidence interval.

Two research studies were located that were conducted for the purpose of evaluating programs designed to reduce the number of moves that children in foster care experience. Both projects used intensive case management efforts as the method of intervention. These studies are unique to the literature in that they examined variables over which child welfare practitioners have some control. First, Tabor and Proch (1987) evaluated the Chicago Services Project in its first two years of operation with a sample of 51 hard-to-place youths with a combined total of 474 documented disruptions. Preliminary results indicated success in reducing the number of replacements experienced by study children by nearly one-half within the two years of the study as compared to the two years prior to the intervention. More specifically, the mean number of moves in the two years before Chicago Services Project

intervention was 4.8. During project intervention, this was reduced to a mean of 1.8 moves. Early clinical assessments, youth involvement in case planning conferences and intensive case monitoring the primary methods employed to enhance the services provided to the children. The authors demonstrated that institutional placements, which accounted for 70% of placements for the two years prior to management by the CSP, were reduced to 19% of all placements during the two years of the study. What is particularly striking about the study is that, after CSP intervention, there was no statistically significant relationship between age at placement and the length of placement for these children.

Lahti (1982) evaluated a demonstration project in Oregon which used specialized caseworker training and reduced caseloads to ascertain whether these services could result in higher placement rates in permanent homes and increased placement stability. The experimental group consisted of 259 children selected for the project who had been in foster care for over a year, who were not considered likely to return home, and who were under the age of twelve. The control group consisted of 233 children under the age of twelve who had been in care for over a year. Cases were tracked for fifteen months after project completion. Lahti found that more project foster children changed homes than did those in the comparison group (84 versus 46 children); however, of the project foster children who changed homes,

71% (n = 60) moved to permanent homes (adoption or reunification). Thus, as was mentioned earlier, the increased replacement rate for this sample of children may have in the long run resulted in more stable placements. Of particular interest in this study is the measurement of child well-being and the use of discriminant analysis to compare child well-being with length of time in care and foster care replacement. Lahti found that neither the number of foster care placements that children experienced nor the length of time that children had been in foster care significantly affected the well-being scores of children in the sample (adoptive placement, foster placement or reunification)²².

Although the type of service provided in these two studies is not especially novel and it could be argued that these more intensive services should be routinely provided to every child in care, results suggest that appropriate assessment, planning and intervention can make a difference in replacement rates, especially with the most difficult children. In other words, there is some evidence to suggest that social workers can make a difference in placement outcomes for children.

²². The assessment of child well-being was based on a sample of 160 children. Well-being was assessed by combining several scale scores by to derive a global or overall measure of functioning. Children were then classified into high, medium or low well-being groups based on factor analysis.

Factors Related to Adoption Disruption:

Who is Disrupting and Why

Research on Adoption Disruption

Considerably more research has been conducted to identify risk factors associated with adoption disruptions than has been conducted on foster care replacement. Many of the findings replicate those found for foster care replacement. Table 4 provides information about the factors that have been found to be associated with adoption disruption. Many of the studies conducted with adoptive children were plagued with problems of the kind discussed earlier (i.e., low sample size, samples of convenience, low response rate, data analysis techniques that did not incorporate multiple variables, and so forth). In order to help make sense of inconclusive or differing results, Table 2 provides information about the sample, design and primary data analysis techniques used.

Low sample size has been especially problematic in the adoption disruption studies reviewed for this dissertation. For example, Westhues and Cohen (1990) had only seven disruptions in their sample of 58 children and Groze (1986) had sixteen. And, although Kagan and Reid (1986) had forty-one disruptions in their sample, small cell sizes still made comparisons difficult. Only six children were members of sibling groups and only eleven children were classified as physically aggressive.

The factors associated with adoption disruption tend to be categorized into three clusters of variables: child factors, adoptive family factors and agency factors. Each will be discussed in turn.

Child Factors

The age of the child at placement appears to be perhaps the single best predictor of adoption disruption, with older children being more at risk of disruption. Kagan and Reid (1986), Groze (1986), Barth et. al., (1986), Zwimpher, (1983), Kadushin and Seidl (1971), and Festinger (1986) all found age to significantly distinguish disrupted from intact placements. In fact, age accounted for rather dramatic differences in disruption rates within the studies. For example, Barth et. al. (1988) found that 4.7% of the children in their sample between the ages of three and five disrupted; whereas, 26.1% of the children aged 15 to 18 disrupted. The overall disruption rate for adolescents was 24.2% (Barth & Berry, 1990). Likewise, Festinger (1991) found that 68% of the children in her sample age eleven and older disrupted within twelve months of placement. (The reader is reminded of the limitations of this study which were discussed on p. 42). Finally, McDonald et. al. (1991) examined the placement outcomes of 235 children from two public and four private agencies in four Northeastern states. All disruptions occurring at these agencies (n = 64) were matched with a sample consisting of 25% of the

population of intact placements at these agencies (n = 171). The researchers found that the mean age of children in the disruption group was 11 years compared to a mean age of 6.6 years for those in intact placements.

The link between age and increased risk of disruption is consistent with evidence found in examining foster care replacement rates. This relationship is probably not surprising to caseworkers who have placed children in foster or adoptive homes. Age is one criterion that social workers and policy-makers use when they define a child as having "special needs". In fact, many of the studies described above looked specifically at special needs children, and these studies all reported higher disruption rates. For example, the mean age at placement in Kagan and Reid's study of special needs children was eleven years. This study found a disruption rate of 53%. This is in stark contrast to the age of children found in samples boasting the lowest disruption rates. Kadushin and Seidl's (1979) study exhibiting a disruption rate of 2.8% was based on a sample in which 90.8% of the children were age five and younger²³. Likewise, the majority of children in Boer et al.'s (1994) study, which reported a disruption rate of 2.3% for children adopted singly and 3% for children adopted with siblings, had been adopted by their fourth birthday.

²³ Kadushin & Seidl's study also was conducted using data obtained from placements that occurred between 1960 and 1967.

Studies of adoption disruption were often obscured when age was not taken into account either in the design of the study or in data analysis. Recognizing the effect of age on disruption rates, several researchers have controlled for age in an effort to make meaningful comparisons between children from intact and disrupted placements. Smith and Howard (1991) matched their population of 74 disrupted adoptions from six of eight service regions of Illinois' public child welfare system with a randomly selected group of children whose adoptions had remained intact. Unfortunately, these researchers did not use data analysis methods that allowed other variables hypothesized to be important in distinguishing between disrupted and intact placements to be partitioned out for analysis, leaving results prone to other inferential errors. For example, child age is related to the length of time a child spends in care, as younger children are more likely overall to spend less time in care. The foster care replacement research is quite clear that the longer a child is in care, the more likely it is that he/she will experience more moves. Smith and Howard (1991) found that the mean number of moves while in foster care was similar between the disrupted and intact adoption samples in their study, which most likely was a byproduct of matching on age. Thus, results supporting the viability of any variables hypothesized to be correlated with number of moves while in foster care or with length of

time in care could be spurious when the hypothesized variables are not held constant.

Rosenthal et. al. (1988) also used a matched pairs design with 27 children in Colorado who had experienced adoption disruptions. Although disruptions in this sample could not be evaluated on the variable held constant (age), by using Logistic Regression in their data analysis, the researchers were probably better able to make meaningful comparisons between disrupted and intact placements than were Smith and Howard (1991). However, as with most studies on adoption disruption, results are hampered by small sample size (n = 27 disrupted cases and 27 intact cases) as well as by the inclusion of four relative placements, five adoption dissolutions and 17 foster-adopt placements in the analysis. It is also unclear from the study what proportion of foster-adopt and relative placements were included in the disrupted or intact placement groups. This is an important distinction because the dynamics involved in relative adoptions and foster-adopts may well be different from those involved in non-relative adoptions. Likewise, if foster-adopts were overrepresented in the group of successful placements, this may explain the study's findings that older adoptive parents are more likely to have successful adoptive placements because foster parents tend to be older (Rosenthal, et. al., 1988).

As noted, several of the studies examined did not

control for age either in the design of the study or in the statistical analysis. Although the following discussion is done in the context of the variable age, which has been shown rather consistently to be associated with increased risk of disruption, it should be noted that many of these studies also failed to control for other variables found to be associated with increased risk of disruption.

Zwimpher (1983) did not match for or control statistically for age in her analysis of 80 disrupted and 80 matched placements in New Zealand. Although she acknowledged that the lack of random assignment in her study precluded causal inference, inferences about the association between demographic variables and disruption most likely were obscured by the failure to hold constant any of the variables that were found to be associated with increased risk of disruption, such as age or length of time married. Kagan and Reid (1986) did not match on any variables hypothesized to be associated with increased risk of disruption in their analysis nor did they control for other variables that may affect disruption rates.

Children with emotional or behavioral disabilities also seem to be more at risk for adoption disruption (Rosenthal, et al., 1988; McDonald, et al., 1991). Although this factor has been strongly identified with increased disruption risk, there is little agreement about which behaviors are more predictive of disruption. For Example, Rosenthal et al.

(1988) found that several behavioral problems were associated with adoption disruption, with no single behavior standing out as a good predictor. Barth, et al., (1988) found higher total behaviors on the CBCL to be linked with disruption. Smith and Howard (1991) found sexual acting out, lying and vandalism associated with increased disruption risk, and Kagan and Reid (1986) found that physical aggressiveness directed toward adults was linked to adoption failure. Regardless of the actual behavior that makes children vulnerable to disruption and the inconsistencies in measurement of behavioral or emotional difficulty, emotional and behavioral problems in general seem to make children more susceptible to placement instability, whether that be adoptive or foster placement.

There also seems to be some evidence that children experiencing unstable adoptive placements are more likely to have been abused and/or neglected (McDonald, et al., 1991; Kagan & Reid, 1986; Smith & Howard, 1991). This is similar to Fanshel and Shinn's (1978) finding that foster children who have entered care because of abuse, abandonment, neglect or family problems are more susceptible to disruption than those who enter care due to a parent's unwillingness to assume care. Olsen (1982) found this to be true for neglect cases only. Although not tested by any of these researchers, age may interact with reason for entry into care to produce these results. It may very well be that

children who enter care because of a voluntary termination of parental rights are mainly infants while those who enter care for other reasons are older. If this is the case, reason for entry into care may be more a byproduct of age than of any real differences in child and family dynamics making abused or neglected children more prone to adoption disruption, and age should be controlled for in any analysis of the relationship between reason for entry and disruption.

Of particular interest in examining adoption disruption rates as they relate to foster care replacement is the rather consistent finding that children who have experienced more moves while in foster care are also more likely to disrupt (Barth, et al., 1988; Barth et al., 1986; McDonald, et al., 1991; Kagan & Reid, 1986).²⁴ This is an important point because few research studies have directly addressed how children react to experiencing multiple moves. Although this is ultimately an empirical question, one could speculate that children who have experienced poor parenting modeling in their birth homes are less likely to know how to live in a family environment and thus experience placement breakdowns throughout their childhoods. On the other hand, one could speculate that children who experience more moves,

²⁴. Smith and Howard's study did not find an association between the number of previous foster placements and disruption (1991). This could have been due to the fact that Smith and Howard eliminated from their sample children who had experienced a previous disruption, thereby eliminating children who had a pattern of moves.

whether due to their own behaviors or other family and agency factors, are less likely to attach to adoptive parents and not as likely to view their placements as permanent. Whatever the reason, the pattern is clear: older children, especially those in care longer, have more behavior problems and experience both more foster care replacement and adoption disruption. Family permanency may be a lost dream for many children in care.

Adoptive Family Factors

The results of studies exploring family characteristics are not as consistent as those exploring child characteristics. This is due, in part, to the fact that fewer studies have examined family characteristics, and again, to poor operationalization of constructs. Nevertheless, some findings seem to reinforce some common themes. For example, it seems that adoptive parents who are older tend to have more intact placements than their younger counterparts (Groze, 1986; Rosenthal, et al., 1988; Zwimpher, 1983)²⁵. Studies also indicate that previous parenting experience tends to be associated with a reduced risk of disruption (Groze, 1986; McDonald, et al., 1991; Smith & Howard, 1991; Rosenthal, et al., 1991). Families whose social workers rated their parenting skills highly also tended to have more intact placements (Rosenthal, et

²⁵. Kadushin & Seidl (1971) actually found that older adoptive parents tended to be associated with less stable placements.

al., 1988; Zwimpfer, 1983), and one study demonstrated more placement stability for families scoring high on some dimensions of the Family Assessment Measure, a relatively more objective device for assessing family functioning (Westhues & Cohen, 1990). In addition, families in which parents shared an equal commitment to adoption tended to have more successful placements (McDonald et al., 1991; Zwimpfer, 1983). Further, a high level of involvement by adoptive fathers in parenting of the adopted child was linked to placement success (Westhues & Cohen, 1990) as was the extent of social support available to adoptive families (Barth, et al., 1988), although it is unclear how any of these constructs were operationalized.

There is no consensus on whether children placed in homes where other children are present are at increased or decreased risk of adoption disruption. Kadushin and Seidl (1971) found that the presence of other children in the home increased the chance of disruption, whereas, Groze (1986) and Zwimpher (1983) found no significant differences between disrupted and intact groups on this variable. On the other hand, Rosenthal, et al, (1988) found the presence of other children to be associated with intact placements. Nevertheless, studies consistently found that the presence of another adopted child in the home was associated with increased disruption (Groze, 1986; Barth & Berry, 1988; Kadushin & Seidl, 1971; Smith & Howard, 1991). To add to

this confusion, sibling placements appeared to be as stable or more stable than single child placements (Groze, 1986; Barth & Berry, 1988; Boer, et al, 1984; Festinger, 1986; Rosenthal, et al, 1988).

Agency Factors

Regarding agency characteristics, there is some evidence to suggest that interagency placements may be associated with increased risk of adoptive placement disruption (Rosenthal, et al., 1991). In addition, two studies examined worker turnover within agencies. One found that it increased the chance of a disruption (Barth et al., 1988), and the other found that it did not (Smith & Howard, 1991). As was the case with foster care replacement, it is not clear from the way disruptions were measured whether removing a child from an adoptive placement was better in the long run. It could be that high worker turnover leaves families feeling isolated and less comfortable accessing agency resources, thereby leading to disruption. On the other hand, new workers may be less invested in "marginal" placements than their predecessors who may have been part of the matching decision. These workers may place less pressure on adoptive parents to continue parenting despite unhappiness in doing so.

Factors Not Found to be Significant/Inconclusive Findings

In addition, the following factors have generally not been found to be associated with increased risk of

disruption: whether or not child had been returned to birthparents before parental rights were terminated (Groze, 1986); the child's prior school performance (Groze, 1986); the educational level of the adoptive parents (Groze, 1986); the racial composition of the home (McDonald, et al., 1991); and adoptive family income (McDonald, et al., 1991; Barth, et al., 1988), except a weak link between extremely low incomes and disruption in Zwimpfer's (1983) study of adoptions in New Zealand²⁶.

Studies of disruption risk factors are inconclusive in regard to some characteristics, such as child gender (Barth, et al., 1988; Barth et al. 1986; McDonald, et al., 1991), and whether children have cognitive disabilities (Rosenthal, et al., 1988; Barth, et al., 1988; McDonald, et al., 1991)

Some research on placement instability has attempted to investigate the matching process that occurs when a decision is made to place children in foster or adoptive homes, as well as other more clinical aspects of placement dynamics. Although careful matching cannot always occur, especially in emergency placements, the lack of research in this area is especially daunting, since matching is, in theory, a large part of what foster care and adoption caseworkers do. Operating without empirically tested tools to guide them in the matching process, many social workers in foster care and

²⁶. It is worth noting again that low statistical power may contribute to non-significant findings.

adoption are forced to develop matching criteria, most often based on conventional practice wisdom or "gut-feelings", to assist them in placing children. Without specifically studying the matching process, it is difficult to know which criteria work towards effecting a good match and which do not.

The research on matching is mostly qualitative in nature, with investigators reporting either typical responses from workers and families or a range of responses, making the uniqueness of each placement apparent. Foster and adoptive family expectations of the type of child they wanted to parent have been repeatedly linked to whether children were successful in their foster/adoptive home (Schmidt, et al., 1988; Barth et al., 1986; Barth et al., 1988; Zwimpfer, 1983), although "family expectations" certainly has not been consistently defined or conceptualized in the research. Although not based on empirical data, Webb (1988) identified matching of the strengths, skills and attributes of foster parents with the special needs of the child as a key component in the success of specialized foster care programs. In addition, Zwimpfer (1983) found in her study of adoption disruptions that "matching for marginality" was a predictor of disruption. Matching for marginality refers to the propensity of many workers to match families seen as marginal in some way (possibly by virtue of age, lifestyle, or income) with

marginal children (possibly children with emotional, developmental or physical disabilities). This flexing of standards for children with disabilities may set the child and family up for failure, as they may have fewer resources to draw upon when a placement is in trouble.

Discussion

Although our laws and our agency policies mandate permanency planning on behalf of children in care, research demonstrates that belonging to a "forever" family is an elusive goal for many children in our child welfare system. Furthermore, for at least a segment of the foster care population, evidence suggests that placement stability cannot be achieved. Although placement permanency has been the battle cry for nearly two decades, few studies have looked beyond the Adoption Assistance and Child Welfare Act of 1980 to ascertain what causes placements to become unstable, and those that have suggest, if not lead to the conclusion, that somehow we have missed the forest for the trees.

Focusing on placement stability as a possible solution to our permanency planning dilemma requires a paradigm shift: perceiving the child welfare system as having some control over decisions that influence positive and negative child outcomes. Until this shift is made in the consciousness of those working in child welfare it is unlikely that research will tap into the most salient issues

affecting placement stability. It is certainly true that placement instability is an inevitable consequence of removing children from their biological homes. After all, foster care is meant to be temporary. But, given the plethora of matching meetings and case staffings in agencies across the country, there must be some belief among child welfare personnel that some moves are more necessary and/or susceptible to prevention by agencies and workers than others, although there may be little consensus on which moves are necessary or preventable and how many moves are appropriate in a given case.

After a review of the current research on foster care replacement and adoption disruption, one is left wondering whether this body of research provides workers, administrators, policy-makers, and legislatures with much practical information with which to recognize at-risk placements and with which to recognize and prevent unnecessary moves and, most importantly, whether disruption research will provide the solutions needed to stabilize our rising foster care discharge rates. It is clear that our understanding of foster care replacement and adoption disruption is hampered by research that relies on inconsistent operationalization of constructs, samples of convenience, too much information from case records and retrospective reports by families and case workers, and too many simple variables to explain a complex and

multidimensional phenomenon. Child welfare workers routinely handle cases in which children predicted to do poorly in placements have thrived in some homes, while others predicted to do well have disrupted. Clinical sense tells many caseworkers that more factors are involved in stability and disruption than simply the age of the child or the number of children currently in the home, including what seems to be the child's "natural" ability to adjust to circumstances that can be considered extremely traumatic as well as the expectations of parents about emotional reciprocity from the child and what behaviors are considered acceptable. Given the state of knowledge, it is not surprising that we do not know how much instability can be tolerated by children and how much is excessive or at least how to best appraise this. It is also not surprising that there are few models of post-placement intervention that can demonstrate increased success in matching children and families.

Placement instability involves a variety of factors affecting permanency planning outcomes which are complex and not easily understood given our rather limited understanding of the placement processes used in agencies across the country. For example, when caseworkers make placement decisions for children in care, they do so based on a variety of clinical and non-clinical factors. Decisions made by caseworkers about which placements would best suit a

particular child will be termed "clinical" for the purposes of this discussion. In these instances, perceived child needs are matched with the perceived needs and strengths of caregivers. With few objective or clinical tools to guide them, workers often match children with placements relying solely on judgement, hunches and sheer guesswork. Sometimes they do a better job than others. Some placements succeed and some disrupt, but workers often do not know why.

Non-clinical factors for the purposes of this discussion are those influences which are not guided by clinical judgement that affect the placement decisions made by caseworkers, such as the number and type of appropriate placements from which to choose and legal decisions that affect the type of placement a child enters. For example, In California, the number of children age five or older residing in group home care more than doubled between 1985 and 1990, with the number of children under the age of one in group home care increasing by 50% during the same time period (Barth, et. al., 1994). Researchers cited California's inability to create enough family foster homes to accommodate increasing numbers of children in care as a likely reason for the increase in group home care (Barth, et. al., 1994). It is likely that children inappropriate for group home care will be moved when more appropriate family placements are available. This non-clinical factor clearly affects worker decisions because, no matter how

seemingly appropriate the activity on the part of caseworkers, odds are that bad placement options will lead to bad placement outcomes for children.

Given all of these factors (the inherently unstable nature of foster care, the real lack of control over non-clinical matters that impinge upon workers making placement decisions, and the dearth of adequate clinical models to assist in placement decisions), it is no wonder that it is difficult to perceive the study of placement instability as leading to practical solutions to the permanency planning dilemma. Earlier, it was suggested that the moves children experience be categorized into those that are fault/no fault and those that are planned and unplanned. Clinical and non-clinical factors most likely interact with the type of moves that children experience to provide a complex set of reasons why children disrupt. The variables found to be significant to date (and possibly those found not to be significant) are most likely moderated by clinical and non-clinical factors and placement types. It is this author's opinion that results from disruption studies are confusing because researchers began to identify correlates of disruption without taking into account these other factors that influence disruption. It seems the most salient question for researchers to ask is why children in a particular sample are disrupting. They most likely would find a variety of clinical and non-clinical reasons, such as the ones

described above. Next, researchers should ask whether hypothesized variables influence some proportion of or types of disruptions rather than all disruptions. For example, a lack of adequate bed space may be the cause of many situational or no/fault moves, whereas parental expectation of the type of child they would like to parent speaks directly to the matching decisions made by social workers that could set up a child for a disruption. Finally, research should address the issue of which variables influence disruption for particular children or in particular circumstances. For example, disruption rates may be lower for children with behavioral problems in some settings and under some circumstances. Or, it could be that children who have moved a great deal while in foster care need specialized preplacement services to help them adjust to the demands of living in a family.

Research also must address children's reactions to moves. For example, do some children react to moves better than others? Do certain services or circumstances assist children and others harm them? Are some moves (i.e., no-fault moves) less problematic for children? Although clinical sense tells us that disruptions cannot be good for children, we really do not know to what extent disruptions are problematic and whether some are experienced differently.

The point in delineating these steps is to demonstrate

that until disruption is investigated systematically and cogently, findings will continue to manifest shallow, ill-conceived and incomplete variables that are of little use to caseworkers, administrators and policy-makers in their attempts to affect permanency for children in care.

Furthermore, without well-designed and empirically tested models of disruption, many of the children with whom we work will continue to be set up for failure by our reliance on technology that results in nothing more than guesswork.

CHAPTER III

METHODS

Subjects

The population chosen for this study were all children in the legal custody of the Tennessee Department of Children's Services in 1995. Children were randomly selected by the Tennessee Commission on Children and Youth (TCCY) in 1995 for the purpose of assessing state child welfare system effectiveness. The Children's Plan Outcome Review Team (C-PORT) project, from which subjects and data for the study were extracted, is discussed in detail in the design section of this proposal.

In choosing subjects for participation in the C-PORT review process, TCCY obtained a list of all children in the custody of the Department of Children's Services (DCS) prior to the February 13, 1995 start date for data collection. This listing was obtained from CORS, a relational data set operated by the Department of Children's Services to track children in care in the state of Tennessee. CORS has been operational since 1993.

In 1995, TCCY randomly selected between 45 and 60 cases from each of the fourteen Community Health Agency's Assessment and Care Coordination Team (ACCT)²⁷ regions in

²⁷. In 1992, the Children's Plan established Assessment and Care Coordination Teams (ACCTs) in each of the 14 Community Health Agency regions in Tennessee. ACCT case managers are primarily responsible for assessing all children entering state custody or at risk of state custody,

Tennessee. This amounted to 674 children chosen for participation in the C-PORT review. The sample size was chosen based on the number of cases needed for the sample to be representative of children in custody (CI = 95% +/- 5% statewide; CI = 85% +/- 15% regionally) (O'Neil, 1996).

A statewide sample of 353 cases was then drawn and compared to the sample of 674 children. TCCY reports that the two samples were similar.²⁸ Basic demographic information based on the statewide sample was compiled by TCCY. Based on this information, the mean age of children in custody was twelve²⁹. The mean length of time in care was 887 days. Thirty-four percent of the children in care were of African American heritage, 58% were of Caucasian heritage and 8% were classified as "other". Fifty-four percent were males, and 46% were females (O'Neil, 1996).

developing a Plan of Care (also known as a child and family service plan, ISP and IFSP in other areas of the country), and monitoring implementation of the Plan of Care. ACCT case managers work in consort with custodial departments in Tennessee to coordinate services for children in care.

²⁸. TCCY notes that the two samples were "virtually the same or within the plus or minus five percentage points margin of error, or had variations that were to be expected". It is not clear, however, what criteria were used by TCCY for comparison, what "expected" variations beyond the 95% confidence interval were found or which variables were within plus or minus five percentage points.

²⁹. Standard deviations for sample characteristics were not provided by TCCY.

Data Collection

Description of C-PORT

The study used the Children's Plan Outcome Review Team (C-PORT) data set, which was collected by the Tennessee Commission on Children and Youth (TCCY) for the purpose of assessing state child welfare system effectiveness in serving children in state custody and their biological families. TCCY is an independent agency created by the Tennessee General Assembly and charged with the mission of advocating for improvements in the quality of life for Tennessee children (TCCY, 1996). In 1991, the Children's Plan was created as an interdepartmental effort to help make Tennessee's service system for children more family focused and responsive to the needs of children and their families (O'Neil, 1995). At that time, TCCY became responsible for monitoring, evaluating and reporting on the status of children and families served under the Children's Plan. In compliance with its mandate to monitor Children's Plan effectiveness, TCCY implemented an evaluation process that would "test" service system performance and outcomes "through the lives of the children and families being served" by the Children's Plan (O'Neil, 1995). This process for continuous improvement in the delivery of services to children and families in Tennessee was titled the Children's Plan Outcome Review Team (C-PORT) and was implemented by TCCY in 1994 (O'Neil, 1995).

The C-PORT evaluation system was designed to provide Tennessee with both qualitative and quantitative information about service system functioning through the use of intensive case reviews on a randomly selected sample of children and their families receiving state funded services. In developing C-PORT, TCCY used funding from the Anna E. Casey Foundation to contract with consultants experienced in the use of intensive case review processes in evaluating service delivery systems in other areas of the country.

The evaluation process began with the establishment of an Interdepartmental Design Team. The team included representatives from all state-managed departments providing custodial services to children in care; Department of Education, Department of Human Services (now referred to as the Department of Children's Services or DCS), Department of Mental Health and Mental Retardation, and Department of Youth Development, Department of Health, Tennessee's Community Health Agency's Assessment Care, Coordination Teams (ACCT), the Tennessee Association of Child Care and the Tennessee Council of Juvenile and Family Court Judges. This Design Team worked in consort with TCCY and its consultants to develop the C-PORT protocol (O'Neil, 1995).

The C-PORT protocol contains a set of over 900 structured interview questions which have been asked of key service providers and clients in each of the cases evaluated under the C-PORT review process. The following individuals

were targeted for interview on each case: the child (if age appropriate), his/her biological parent(s), ACCT worker(s), custodial department worker(s), caregiver(s) (including foster parents, relatives providing care and direct care staff in a group facility), court representative(s), teacher(s), and other relevant service providers such as an extended family member or a mentor to the child. C-PORT reviewers sought to interview individuals in each of the categories, but this was only accomplished when service providers and clients were available and willing to participate in the interview and when an interview was appropriate. For example, if parental rights had been terminated on a specific case, the C-PORT reviewer may not have been able to locate the biological parents or may not have deemed an interview appropriate. Likewise, young children, runaways and youth who could not understand and respond appropriately to the structured questions may not have been interviewed or were only asked a few of the interview questions.

The protocol was pilot tested in two ACCT regions and adjustments made to the protocol and review processes prior to implementation in 1994 (O'Neil, 1995). There is no indication, however, that TCCY tested the reliability or validity of the protocol in a formal, established manner prior to implementation of the case reviews.

All reviewers were trained in the use of the C-PORT

protocol and CAFAS (the Child and Adolescent Functional Assessment Scale which was also completed on each case reviewed) (O'Neil, 1996). Reviews in each region were conducted within one week. Each case was reviewed by a single reviewer. Interviews were conducted on each specific case. Case records were also reviewed as were the plan of care³⁰, social histories and court orders. Nevertheless, most information obtained for each case was through direct interviews with clients and key service providers (O'Neil, 1995). Each interview took about an hour to complete (O'Neil, 1995).

Two kinds of information were obtained through the case review process. First, reviewers obtained objective information about the child either directly through interviews or indirectly through case record review. This included demographic information, as well as information obtained by asking the child, his/her family and key service providers questions contained in the C-PORT protocol. Based on information obtained in the first phase of the case review, the reviewer then responded to a set of questions that required him/her to evaluate the status of the child

³⁰. The "Plan of Care" is Tennessee's term for what is often called the Individual Family Service Plan (IFSP), referring to the birthfamily goals and objectives portion, and/or the Individual Service Plan (ISP), referring to the child goals and objectives section, in other areas of the country. In Tennessee, a Plan of Care must be completed for each child in care, and a separate Plan of Care is completed for birthfamily members.

and the functioning of the system. These questions were answered based on a set of indicators predetermined by C-PORT protocol developers. Reviewers were also asked to identify system strengths, noteworthy accomplishments and emerging system performance issues observed in the cases reviewed (O'Neil, 1995). This more subjective evaluative information was informally termed the "roll-up sheet questions" referring to their location at the end of the C-PORT protocol.

It is important to distinguish between the two types of questions asked, as this distinction directly relates to the reliability and validity of information obtained through the C-PORT interviews. The first set of information was obtained through the more objective process of conducting first-hand interviews and case record reviews. This information depicted the child's experience through his or her eyes as well as the experience of family members and key service providers in attempting to appropriately plan for the child's care. Demographic and child status information (i.e. type of placement and court adjudication) were also included in the first set of information.

The second set of information, the so-called "roll-up sheet" information, was more subjective in nature. It was collected for the purpose of helping TCCYS evaluate how the child welfare system in Tennessee was performing. Based on the information obtained in the first set of interviews, the

reviewer formed an opinion about how well the individual child and the Tennessee child welfare system were functioning and summarily responded to a set of questions designed to elicit opinions about overall service system functioning³¹. The roll up information was then used to train staff in the individual counties (O'Neil, 1996) and was presumably also used for other administrative purposes. TCCY then only entered the "roll up" data for analysis. The data obtained by direct interview and case record review was not analyzed until TCCY collaboratively made it available to Vanderbilt University and the University of Tennessee in 1997. For clarity, any further reference to the C-PORT protocol questions or individual questions obtained from C-PORT will imply that the data were obtained from the first set of more objective questions obtained through the C-PORT interview process, as none of the less objective "roll-up sheet" information was used in the present study.

C-PORT Data Entry

As mentioned previously, TCCY only entered the data obtained in the 1995 C-PORT "roll up" sheets into a data base for analysis. The interview questions and demographic

³¹. For example, C-PORT reviewers were asked, "Is the child's current living arrangement likely to be disrupted in foreseeable future due to unmanaged risk?" and "Is the child receiving treatment that is of the intensity and scope necessary to facilitate the child's participation in school, family, and social activities?". Much of the criticism of C-PORT has focused on the reliability and validity of "roll up" sheet questions.

data contained in the C-PORT protocol were neither entered into a data base nor analyzed by TCCY. The 1995 C-PORT data set was entered into data base format as a joint project between the University of Tennessee School of Social Work at Knoxville and Vanderbilt University Institute for Public Policy Studies in the spring of 1997. The data were entered directly from the original C-PORT protocol books completed by C-PORT reviewers during case reviews in 1995.

The data entry process was as follows. First, a program was created that required data entry persons to enter data directly from the protocol books and then re-enter every record from beginning to end a second time. When discrepancies occurred between the first and second entries, the program halted entry until the correct information could be verified and re-entered two more times. Each record took approximately forty-five minutes to enter, and the present researcher entered one-third of the data. The C-PORT data then were linked with Tennessee Department of Children's Services' administrative data set (termed CORS) by child identification number. The final data set contained information for 658 children sampled by TCCY in the C-PORT interview process and all CORS data relating to these children³². The data base then was distributed to

³². TCCY sampled 674 children in 1995. However, some children were sampled both in 1995 and 1996. As part of the joint project between the two universities, some researchers were interested in the "roll up" sheet data for 1996 entered by the state of Tennessee. In combining data sets for

participating departments at UT and Vanderbilt.

Description of CORS

The CORS data set has been operational since 1993 in the state of Tennessee. It contains information about the history of all placement moves of children in substitute care, their special needs, demographic information and other information deemed useful to state administrators in planning and evaluating services. The reader may recall that the CORS data set was the sampling frame used by TCCY to obtain the sample of children in care in 1995. Researchers at Vanderbilt and the University of Tennessee have been unable to locate any protocol written by the state of Tennessee for CORS data entry or any documentation about the accuracy of data that have been entered into the CORS data set. However, it is known that at the time of collection, ACCT workers in the fourteen ACCT regions in Tennessee were responsible for submitting information about children on their caseloads and any status changes for the purpose of updating the CORS data base.

Administrative data sets such as CORS were mandated by the 1992 amendment to the Adoption Assistance and Child

analysis, a decision was made to assign cases appearing in both years (n=31) to either 1995 or 1996 data sets depending on which year contained the most information on a child (or on random selection if information was comparably complete in both years). This decision was made to eliminate errors associated with having a data base containing children with duplicate identification numbers. As a result, 16 of the 674 cases in 1995 were dropped from the data base.

Welfare Act of 1980 (Social Security Act, 42 U.S.C. Section 620 et. seq.). Several of the studies reviewed used such tracking systems to obtain data regarding the experiences of children in care (Pardeck, 1984; Wulczyn and Goerge, 1992; George, 1994). Recently, in an article outlining a possible foster care research agenda for the 1990's, Goerge, et al, (1994) pointed to the advantages of administrative tracking systems in targeting research questions, identifying variations in service delivery and placing field studies in their appropriate context.

Used alone, CORS would not provide much in-depth information about replacement. However, the present study takes the use of administrative tracking systems a step further than has been done with previous research on disruption. The present study links the CORS data set with information obtained through the C-PORT case review process. This provided a richer and more complete understanding of the placement experiences of children in care.

Study Design

C-PORT and CORS

The present study relies primarily on information gathered during the C-PORT interview process in 1995. The C-PORT study is best classified as cross-sectional, survey research. However, the C-PORT interview and case review process accessed a great deal of retrospective data, such as past history and types of moves that children had made

during their tenure in foster care. This is not unlike previously discussed cross-sectional studies which were sometimes referred to as retrospective studies by researchers because they accessed placement histories through case records.

As an ongoing data base, CORS could best be described as a longitudinal survey of foster children in the state of Tennessee. As such, CORS lends itself well to prospective study of disruption. While the CORS data set was established in 1993, just two years prior to gathering C-PORT data, it does contain retrospective data on placement histories and several other variables of interest. In fact, CORS recorded placements as far back as 1982 for the children sampled for the present study.

The variables chosen from both C-PORT and CORS for inclusion in the present study are discussed in the Data Collection section. A detailed list of variables is available in Table 5 of Appendix B.

Special Problems Created When Combining CORS and C-PORT Data Sets

Combining data sets is often difficult from a logistical vantage point. As Kiecolt and Nathan (1985) point out, difficulties can arise when data sets are combined and the sample is not comparable. Since CORS is an ongoing data base, charting changes in child status over time, it contains information about children from 1993 until

1997 (with some variables such as placement type and date of placement charting children's progress from the time they entered care). This can cause some problems when information gathered by CORS is combined with information gathered from C-PORT, which is a cross-sectional study of child well-being in 1995 (which also contains retrospective information). For example, suppose one were to test the hypothesis that length of time in care is positively related to foster care replacement (i.e. the longer children remain in care, the more disruptions they experience). If one were to select the independent variable "length of time in care" from CORS and the dependent variable "number of moves" from C-PORT, problems with interpretation could arise.

Obviously, many children would have remained in care past 1995, and this would be reflected in the number of days CORS would indicate that the children had been in care. However, C-PORT would stop counting disruptions in 1995. If the situation were reversed with CORS being used to measure the dependent variable "number of disruptions" and C-PORT being used to measure "length of time in care", CORS would continue to record disruptions occurring after 1995 while C-PORT would stop recording days in care in 1995. In other words, a situation may be created where the data are incomplete or "censored" when variables chosen for analysis are not comparable.

Although Kiecolt and Nathan (1985) do not directly

address the issue of comparing a longitudinal data base with a cross-sectional data base, they do discuss several solutions to other issues arising from item or sample non-comparability. Each of these solutions involves finding ways to test for item and sample non-comparability and creatively equalizing samples or sample items.

In this study, two methods were used to equalize the samples and sample items. First, time-sensitive variables were chosen from one primary data set (CORS). These variables were then altered to fit the time frame examined by the C-PORT review process.

The CORS data set was developed for the purpose of tracking children in care. It contains information not only about the type of placements children experience but also the entry and exit dates for each placement. C-PORT does not contain such detailed placement histories. Because an accurate account of placement histories was crucial to the research at hand, the CORS data set was used as the data base from which to extract time-sensitive information such as number of placements, child age and the length of time in care.

These variables were extracted from CORS in a manner that made the data comparable to C-PORT. For example, the "number of placements" variable was created by selecting only those placements that occurred prior to the C-PORT interview date. Likewise, child age was determined by

subtracting child birth date from the C-PORT interview date. The length of time in care variable was created by subtracting the date of entry into care from the C-PORT interview date. Nevertheless, many variables chosen from the two data bases were not time sensitive. For example, the reason a particular child came into care would most likely be recorded the same by workers and reviewers whether asked in 1995 or 1997 or any other year for that matter. C-PORT was rich with information that was not time sensitive and lent itself well to utilization as a supplemental data set. The variables chosen for analysis in the present study are discussed in the data collection section and are operationalized in Table 5.

In an effort to examine how the decision to extract time sensitive information from CORS rather than C-PORT might affect results, frequency distributions for the dependent variable "number of placements" were obtained from both data sets. C-PORT showed a mean of 3.78 placements (sd = 3.14) and a range from 1 to 19 placements with a sum of 2,313 for the sample of 658 children. There was 7% missing data. CORS showed a mean of 3.53 placements (sd = 3.12) and a range from 1 to 22 placements with a sum of 2,257 placements for the sample of 658 children. Only 2.9% of the data were missing from CORS. A t-test for dependent groups indicated that these two samples were indeed different (t(593) = -2.62, p = <.01, two-tailed), indicating that a

decision to use one data base over the other may result in slightly different conclusions even though the mean differences may seem quite small.

While the C-PORT data set has many strengths, it was not developed for the purpose of tracking children in care. Instead, C-PORT primarily focused on assessing child well-being and system effectiveness. It provided information only on the number and type of placements children experienced, and it is not clear whether reviewers used case records or worker report to determine the reported number of placements. With the tremendous worker turnover experienced in public child welfare agencies, many workers may not have even read the record let alone been able to accurately tally placements if interviewed for the placement information on the C-PORT protocol. On the other hand, the CORS data set was developed for the purpose of tracking children in care over time. For each placement change children experience, workers are to submit placement type and corresponding dates for each out of home placement. For this reason, it is believed that the CORS placement information is the most accurate and should be used as the primary source for the dependent variable and subsequently used for other time sensitive variables³³.

³³. The reader should note that the C-PORT data base was chosen for Part II of the analysis given problems with obtaining a "flat file" from CORS to analyze the number of each type of placement sample children experienced while in care.

As has been alluded to previously, the CORS data set needed modification to reflect only those placements, court adjudications, and other activities that occurred prior to each child's C-PORT interview date. In doing so, many activities occurring after the C-PORT interview date could not be analyzed. For example, some children may have had subsequent placement disruptions or court adjudications that could not be used if the data bases were to remain compatible.

Design of Present Study

As has been discussed, the study used information from two data sets: one which is cross-sectional and one which is longitudinal. In combining the data sets, special issues of sample comparability required that the present study equalize samples to provide for more meaningful interpretation of results. In doing this, a cross-sectional study was created.

Study Variables and their Measurement

Research Study 1: Predictors of Foster Care Replacement Dependent Variable

The dependent variable is the number of placements a child has had. It should be noted that some previous researchers have counted the number of disruptions rather than the number of placements. Number of placements and number of disruptions are both count variables that are similar in concept. They both quantify how much children

are moving between substitute living situations. Nevertheless, each has a slightly different meaning. Number of placements is the number of disruptions plus one (the initial placement).

Number of placements was chosen over number of disruptions for two reasons. The first reason had to do with establishing construct validity in the study. While little confusion is created about what it means to count the number of moves by children in substitute care, this is not necessarily true when counting disruptions. Some researchers may consider reunifications with biological parents as disruptions, while other researchers may be concerned about only counting "fault" moves or "true disruptions" over those that may have been caused by systemic failures (i.e. moves between temporary shelters) or other "no fault" reasons. Number of moves was also chosen because counting disruptions would have also caused additional problems in analyzing the data. In brief, in the primary method of data analysis chosen, using a dependent variable which contains a value of "0" creates a situation where the data are truncated. This means that observations would enter the sample only after the first count occurs (i.e. children must have experienced at least one disruption before entering the sample). Long (1997) terms this common data issue "truncation at zero". Using number of placements as the dependent variable eliminates the special

treatment of data that would occur with zero truncated samples. The primary method of data analysis will be discussed in detail in the data analysis section.

Independent Variables

Drawing from previous research on foster care replacement and adoption disruption, several variables were selected for inclusion in the present study. Following is a brief discussion of these variables. Independent variables are operationalized in Table 5.

Child age.

Child age has consistently been positively correlated with foster care instability, in that older children are more likely to experience more placements (Proch and Taber, 1987; Olsen, 1982; Pardeck, 1984; Taber and Proch, 1987) as well as adoption instability (Kagan and Reid, 1986; Groze, 1986; Barth et al., 1988; Zwimpher, 1983; Kadushin and Seidl, 1971; Festinger, 1986). It was considered likely that age would also be a strong predictor of disruption in the present study. It has also been shown to be related to other variables predictive of disruption. Age was considered a control variable in subsequent analysis because of its possible moderating influence on other variables of interest.

Special needs: Emotional and/or behavioral problems.

The presence of emotional or behavioral problems also has been consistently linked with increased risk for foster

care replacement (Mass and Engler, 1959; Olsen, 1982; Palmer, 1979; Stone and Stone, 1983; Fein et al., 1983) as well as adoption disruption (Rosenthal, et al., 1988; McDonald, 1991; Barth et al., 1988; Smith and Howard, 1991) despite differential operationalization of the construct(s) "emotional and/or behavioral problems" in each of the previous studies. The CORS and C-PORT data bases lent themselves quite well to testing the relationship between the presence of emotional and/or behavioral problems and the risk of additional placements.

Special needs: Physical disabilities.

While the presence of emotional/behavioral problems has been consistently positively correlated with foster care replacement and adoption disruption, there is no consensus as to whether the presence of physical disabilities is related to disruption. One study found physical disability to be positively related to adoption disruption (McDonald, et al., 1991) while three studies found no relationship (Barth & Berry, 1988; Barth et al., 1986; Rosenthal, et al., 1988). In previous research on foster care replacement, the presence of a physical disability was not examined as a factor related to disruption. The present study examined this variable in relation to foster care placement stability.

Examining additional special needs variables and the presence of multiple special needs.

Both the C-PORT protocol and the CORS data set contain specific data about the child's special needs. For example, it is possible to study several unique special needs or the presence of multiple special needs as they relate to replacement. Several unique categories of special needs were created from the combined data sets. They are as follows: emotional/behavioral problems, physical disability, mental retardation, non-MR developmental disability/delay, chronic/acute health condition, and child alcohol/substance abuse. Each of these special needs categories was tested in relation to foster care instability with the sample of children in substitute care in Tennessee.

Operational definitions can be found in Table 5, however, it may be helpful to the reader to have one special needs category delineated for illustrative purposes. To determine which children have one or more physical disabilities, C-PORT has a specific question on the protocol about whether a child in question has a physical disability. On the other hand, CORS asks whether a child has a sensory impairment, is visually impaired, is hearing impaired, is deaf and blind, is language impaired, is physically impaired, is speech impaired, or has a traumatic brain injury. Using SPSS (SPSS, Inc., 1994), it was possible to create a dichotomous variable for the construct "physical

disability" (0 = no physical disability and 1 = physical disability) by selecting those cases in which one of the above disabilities was indicated for children on either data set.

Individual special needs categories of variables could be created using the combined data sets. It was also possible to study the effects of special needs in general or the presence of multiple special needs on foster care replacement. Table 5 outlines several variables from the combined data sets which were used to create variables representing the general presence of special needs as well as the presence of multiple special needs.³⁴

Primary reason for entry into care/court
adjudication/custodial department.

The reason for entry into care has also been associated with increased risk of foster care replacement (Olsen, 1982; Fanshel and Shinn, 1979) and adoption disruption (McDonald,

³⁴. Some issues in relation to special needs variables merit further comment. Although C-PORT specifically asks the reviewer to identify special needs in the demographic profile portion of the protocol, this section was often left blank or was not completely filled out. For example, the section of the profile asking whether a child had an emotional illness or behavioral disorder might be left blank while a subsequent question would indicate that a child had a DSM diagnosis of mental illness. In all, 9 variables were identified that asked about a specific special need on other portions of the protocol other than on the demographic profile. In order to study any special need in relation to replacement, the data were cleaned with information from the nine variables imported to the demographic profile section of the data base.

1991; Kagan and Reid, 1986; Smith and Howard, 1991). In addition to primary reason for entry into care, the type of court adjudication, and the department that was assigned custody by the court are all examined to determine whether they are associated with increased risk of disruption. It was hypothesized that there would be a high degree of interaction between these variables and age of child. For example, younger children may be more likely enter care because of voluntary relinquishment, and older children will most likely be adjudicated "unruly" (e.g. perpetually truant from school). As for the department assigned custody, it is more likely that the Department of Youth Development (DYD) will have older children assigned to it than the Department of Children's Services. DYD children will also most likely be entering care because of behavioral difficulties. If DYD children are indeed older and suffering from more behavioral difficulties, it may be that children assigned to DYD experience more moves than children assigned to other departments. If not, the study may suggest different program and policy interventions.

Placement restrictiveness.

Although not tested in previous research, the construct "placement restrictiveness" was examined to determine whether it is positively correlated with risk of disruption. When children are moved to more restrictive settings, the assumption often made by workers and courts is that a more

restrictive setting might help children find the stability they need by virtue of the increased structure and supervision that more restrictive environments provide. From a policy-perspective, it may be useful to know whether children moving to more restrictive settings find increased placement stability.

With some modification in the data set it was possible to categorize placements according to level of restrictiveness and study the changes in restrictiveness level for children in care in Tennessee. The 30 placement categories identified in CORS are most easily collapsed into three levels of restrictiveness. Level 1 represents children placed in family homes, whether foster family or kinship foster homes. Level 2 represents children placed in group placements where paid professionals rather than families care for them³⁵. Level 3 represents facilities which provide specialized hospitalization and those often termed "lock-down" facilities where children are placed for specialized help and for the purpose of segregating them from society. Movement within Level 3 facilities and interaction with others outside these facilities is often

³⁵. Within each of the three levels devised to test placement restrictiveness, there are also differing degrees of placement restrictiveness. For example, residential treatment facilities classified by the state at level 3 tend to provide more structure and supervision than those classified by the state as level 1. Even with a thorough understanding of all programs available to children in Tennessee and program components, it would be nearly impossible to compare placements on a more precise scale.

extremely restricted. Figure 1 in Appendix B delineates the programs listed in CORS as being available to Tennessee children residing in substitute care placements. These placements are grouped according to the three level classification system used in the analyses of placement restrictiveness³⁶.

Once variables were created classifying placements into the three levels of restrictiveness, it was then possible to roughly examine children's movements between levels. First, a variable was created reflecting the initial placement level of children in care. A second variable was then created to indicate the placement level in which children were residing at the time of the C-PORT interview. To indicate movement between placement settings according to the delineated restrictiveness categories, two additional variables were then created. The first variable indicated movement to a more restrictive setting. This was accomplished by selecting cases where children started in level 1 or 2 placements and ended up in level 2 or 3 placements respectively³⁷. The second variable indicated movement to a less restrictive setting and was created in

³⁶. This categorization scheme is straightforward enough to not require demonstration of reliability and validity.

³⁷. A dichotomous variable indicating whether children had been moved to more restrictive placements throughout their tenure in care was created (1 = more restrictive, 0 = not more restrictive).

much the same manner. The newly created variables indicating placement restrictiveness and movement between levels of restrictiveness were expected to be useful for the second portion of the proposed analysis which will be discussed in greater detail later in this dissertation.

Placement type.

It was also hypothesized that some placement types (such as the use of emergency shelters or the identification of foster-adoptive homes may lead to more or fewer placements for children in care. The 30 types of placement resources in Tennessee present in the CORS data base were compared with each of the others in relation to the frequency or expected probability of disruption. The 30 placement resources available to children in Tennessee and reflected in the CORS data base are delineated in Table 5.

Probably the largest problem in using the CORS data base came from the fact that the data base contains transactional level data rather than data on an individual (i.e. child) level. Thus, when a child has a change in status, the child identification number is entered followed by the information containing status changes, resulting in a file that contains information about status changes rather than a file that contains information about children. For example, when examining placement histories, one could not simply examine a child record containing information about the first move, second move, and so on. Instead, one must

find the several transactions about one child and then try to construct a child record (i.e. make a flat file). This was a difficult and tedious process making it extremely difficult to examine placement patterns without major modification to the data set. And, only first and last placements could be reliably extracted. For this reason, only initial placement type and placement type at the time of the C-PORT interview were examined.³⁸

Length of time in care.

Length of time in care has also been consistently associated with increased risk for foster care instability (Pardeck, 1984; Olsen, 1982; Fanshel & Shinn, 1978) with

³⁸. To construct the variable containing information about the initial placement a variable indicating the order of the placement (ORDERP) was used. Cases were selected if ORDERP was equal to "1". This was saved in a separate file (thereby creating a flat file) and then merged with the C-PORT file. Identifying the last placement was more difficult since CORS contained information past the date of the C-PORT interview. First, a number of placements variable was created by importing the C-PORT interview date into the CORS placement file. A placement date variable was then created by changing the three CORS placement date variables (month, date and year) into a single computer date variable (time since the year 1542). Cases were then selected if the placement date was less than or equal to the interview date. An aggregate file was then created with the MAXIMUM VALUE of ORDERP as the aggregated variable and CLIENT ID as the break variable. The flat file containing the number of placements was then merged back with the CORS placement file. Cases were then selected if the ORDERP variable was equal to the newly created variable indicating the number of placements occurring prior or on the day of the C-PORT interview (SELECT IF OFDERP = NUMPLACE. A flat file containing the last placement was then created. This file was merged back into the C-PORT file as was done with the first placement variable that had been created.

children in care longer experiencing more instability³⁹. While the simple bivariate relationship between length of time in care and number of placements does little to further our understanding of foster care replacement, previous research makes a strong case for statistical control of length of time in care before any data analysis can produce trustworthy results. Again, it was hypothesized that child age would interact with length of time in care when regressed on number of moves.

Parental visitation.

As was discussed previously in this dissertation, Fanshel and Shinn (1978) found a small inverse relationship between the amount of parental visitation and disruption. The present study was ideal for testing the hypothesis that children in care who have regular visitation will have more unstable placements because it specifically asked the caregiver(s), ACCT worker and Custodial Department worker how frequently visitation occurred with each parent as well as extended family members.

Research Study Part II: Developing and

Testing a Typology of Disruptions

Typology of Disruptions

As was discussed in the literature review, traditional means of measuring the construct "disruption" or

³⁹. These findings do not hold true for adoption disruption (Groze, 1986; Barth & Berry, 1988; Barth, et. al, 1986; Berry & Barth, 1990).

"replacement" have tended simply to count the number of moves or the number of placements a child has experienced. By doing this, researchers have failed to demarcate between moves that are part of the permanency plan (i.e. placement successes) from those that are not part of the permanency plan (i.e. placement failures). Likewise, merely counting the number of moves provides little information about whether the disruption is part of a systemic failure (i.e. lack of bed space) or a clinical failure on the part of caseworkers to make appropriate matches between the child's functioning ability and the ability of caregivers to meet the child's needs. Finding a typology for defining and categorizing moves is imperative to increased understanding of how our child welfare system functions to either contribute to or mitigate disruption risk as children matriculate through the system.

Finding a classification system for disruptions requires that one acknowledge that some disruptions are better than others, as they are made with the goal of achieving permanency for children. It also requires that researchers understand that although some disruptions are the result of poor clinical decisions made by workers in the process of matching children with families, many placement decisions are out of the immediate control of the worker. Whether children experience these disruptions differently remains an empirical question to be answered with further

research, however. Nevertheless, viewing disruption as having more than one facet brings about a richer understanding of this phenomenon and how policies and social work practices can effect shorter pathways to permanency for children matriculating through the child welfare system.

Figure 2 of Appendix B offers a method of categorizing disruptions with possible reasons for disruption presented in one of four quadrants. Quadrants I and II attempt to capture moves precipitated as part of a permanency planning attempt. They differ in the degree of clinical decision-making autonomy afforded caseworkers. In quadrant I, the assumption is that the caseworker has at his/her discretion made a clinical decision about the timing and appropriateness of a placement. In quadrant II, either the court may exercise more decision-making authority or another over-riding concern, such as important family or friendship ties, supersedes the matching process. These "successes" usually only occur after a certain amount of child and family assessment information has been gathered by the caseworker, court or others involved in case planning. Again, these two quadrants differ only in the degree to which workers control the matching process. Moves categorized in quadrant II certainly still require some worker input, most likely in the form of a recommendation.

Quadrants III and IV depict moves that occur with no discernible attempt at permanency planning on the part of

caseworkers, courts or others involved in placement decisions. These moves are what many would consider true placement disruptions because factors other than permanency planning account for decisions to move children. Again these quadrants differ only in the degree to which worker clinical decision-making autonomy is prominent. For example, quadrant III depicts moves that are the result of poor matching between a child's needs and behaviors and the subsequent ability of the selected placement to meet the needs and tolerate the behaviors. Quadrant IV depicts moves that occur primarily as the result of problems inherent in the functioning of the child welfare system such as the need to use a temporary placement until an appropriate match is available.

Earlier in this dissertation, it was suggested that finding alternatives to the previous research standard of lumping all moves together under the construct "disruption" is important to furthering our understanding of disruption and to identifying the level and type of intervention that is most appropriate. This point can be illustrated best using the proposed typology in Figure 2. Disruptions falling within quadrants I and II would most likely be viewed as successes, especially if the pattern of moves for most children emerged as one or two carefully planned moves aimed at finding permanency. Primary research and practice interventions may involve finding appropriate methods of

intervention to help workers and families prepare children for placement instability as a sad but inevitable part of removing children from biological homes. A high number of disruptions in quadrant III may point to a pressing need to improve caseworker training in regard to matching and intervention with children and families at risk for disruption. A high number of disruptions in quadrant IV may point to the need to make systemic changes aimed at providing more placement alternatives for workers and/or policies and procedures designed to limit the use of or length of time a child spends in a temporary placement.

It is also important to note that interventions designed to reduce disruptions without regard to these issues may fail to give credence to the positive role that some disruptions may have on child well-being in the long run or to the importance that systemic factors may play in the ability of caseworkers to make good clinical decisions regarding matching. Furthermore, lumping all moves together as disruptions may provide researchers with misleading information about which interventions aimed at reducing disruptions are most effective. For example, some interventions aimed at reducing disruptions may do little to reduce the number of disruptions overall while making a world of difference to the disruptions in one quadrant of the table. To illustrate this point, one might develop an intervention designed to move children to less restrictive

placements. The overall disruption rate may not fluctuate with intervention, but the number of placements in more restrictive settings may decrease (quadrant III) while the number of placements in less restrictive settings may increase (quadrant I). The intervention may have merit in that the quality of life children experience may be dramatically better, more children may have a chance at permanency as they move from a group setting to a family setting, and the cost of providing substitute care for a given state may decrease as the overall level of restrictiveness decreases.

Classifying Moves into Quadrants

Although C-PORT questions were not designed for the express purpose of categorizing disruptions into neat categories, there was some merit in testing a typology such as the one used in this study on an exploratory level to see if categorization of disruptions results in a richer understanding of this complex phenomenon. The protocol provides some of the primary reasons for disruption that children in the sample have experienced. It was hoped that by also linking up to the CORS data set, a picture would emerge as to the number and type of disruptions children interviewed through C-PORT have experienced. For example, it was possible to determine from the C-PORT and CORS combined data sets the type of placement in which a child resided at the time of the C-PORT interview as well as the

type placements in which the child had previously lived (i.e. adoptive home, foster parent adoptive home, foster home). It was also possible to determine from the C-PORT data whether children had been placed in temporary placements awaiting openings at more appropriate placements and how many of these temporary placements were made.

The aim of this phase of the research study was to determine what proportion of moves could be identified as part of a viable permanency plan (quadrants I and II) and which could not be identified as part of attempts to further permanency planning (quadrants III and IV). In addition, the study attempted to ascertain what proportion of placement failures resulted from poor matching (quadrant III) or systemic problems under little control of the caseworkers involved (quadrant IV). Table 5 outlines some variables from the combined C-PORT and CORS data sets that were thought to be useful in determining where many of the placements fit in the classification table (Figure 2).

Improvements over Previous Research

Sampling

External validity is defined above as involving consideration of how well research findings can be generalized to and across populations, settings and times (Cook and Campbell, 1979). As was discussed, foster care replacement and disruption research has primarily focused on subpopulations of children chosen for study using non-

probability sampling techniques. This information from non-probability samples helps one to better understand how well conclusions can be generalized across populations.

Generalizing to the population of children in foster care is more difficult, as it requires that the population be known and that children be selected for study using probability sampling techniques. Given that researchers and policy-makers do not know with any high degree of certainty how many children reside in foster care in the United States or under the auspices of public and private agencies in any given state or geographical area, the next best method is to find the largest and most heterogeneous known population of children in substitute care, to draw from this population using probability sampling techniques, and to see whether results hold true for this population in the same way they have for smaller samples of convenience. In short, it is critical to our understanding of disruption and our confidence in the external validity of disruption research results that researchers be able to make meaningful generalizations to the population of children in substitute care.

In recent years, researchers have had access to fairly extensive data on the number of children residing in publicly managed substitute care within a given state. In fact, two studies reviewed relied on large numbers of records from public agencies to identify correlates to

disruption. Pardeck (1984) analyzed results from a national study of 319 public social service agencies in 38 states, and Barth and Berry (1988) studied 927 children who had experienced disrupted adoptive placements.

The C-PORT data set was drawn from a random sample of children in the custody of public agencies in the state of Tennessee. TCCY studied a known population by drawing from the state CORS data set, which tracks all children in care in the state of Tennessee. This coupled with probability sampling techniques help make C-PORT findings generalizable to the population of approximately 11,000 children in state custody in Tennessee.

Questionnaire

C-PORT also offers several advantages over previous research on large populations of children like that of Pardeck (1984) and Barth and Berry (1988). First, whereas the previous two studies were limited by the relatively limited information about the children available to the researchers, C-PORT provides the opportunity to study indicators of child well-being in greater depth. The C-PORT protocol contains a large number of variables designed to provide a comprehensive picture of the well-being of children in custody in Tennessee. This is not to say that this list of variables is exhaustive and that all variables tap a construct in the best way possible. However, TCCY did use what they considered to be the best available technology

in the design and implementation of C-PORT, providing an extensive list of variables for study. Secondly, C-PORT used both interview and record review formats with a high degree of participation by interviewees.⁴⁰ Finally, by combining C-PORT with CORS, the data base allowed for analysis of the history and patterns of moves that children in children in Tennessee have experienced.

Study Limitations

The data have many of the usual problems associated with secondary data analysis, primarily that the data set was not collected specifically for the purpose of studying foster care replacement. Kiecolt and Nathan (1985) note that survey procedures followed by the organization collecting the data in a secondary data analysis project may not have been sufficiently documented to enable secondary analysts to assess errors in the data. This is a potential concern with C-PORT. Although TCCY went to great lengths to train interviewers and to oversee the data collection process for C-PORT, there is no evidence to lead one to believe that the Department of Children's Services exercised

⁴⁰. The reader is reminded that Barth and Berry's study was limited in the relatively few variables that could be collected in the first phase of the study and by large non-response rates in the second phase of the study (where disruption was given a more in-depth look). Pardeck (1984) on the other hand, relied solely on the few variables available from state administrative data bases. The reader is also reminded that the present research utilizes information from the administrative data base operational in Tennessee (CORS) but combines this information with data gathered as part of the C-PORT review process.

much control over the process of entering data and updating changes in the CORS data set, the data set from which the sample was extracted. Thus, there is no way of knowing how accurately CORS portrayed the number of children in care in Tennessee at the time the sample was drawn.

In addition, as will be discussed in more detail after analysis of the data, some C-PORT variables had considerable missing data. Some of this can be explained in the way UT and Vanderbilt chose to code variables in the data entry program, but much of the problem had to do with reviewer failure to obtain interviews with key individuals involved in the case. C-PORT left decisions about which individuals were to be interviewed and whether all the questions on the protocol would be asked to the discretion of the individual C-PORT reviewer. Because there was no requirement that reviewers indicate the reasons for missing interviews or responses, this information is not available.

As has been noted, C-PORT and CORS data were collected for administrative purposes rather than research purposes. So, while the data bases provide an extensive array of variables for study, many variables are not conducive to answering research questions. Some are based on the subjective opinions of researchers, and many do not have any direct link to replacement research. Although the use of administrative data sets for research purposes has become more popular in the past decade (primarily because states

are now mandated to track children in care), to date there has been little interest in quantifying how permanency planning actions (such as placement decisions) effect child well-being. In short, the goal of assessing "system functioning" can mean different things for agency administrators than for researchers.

Finally, and perhaps most importantly to the research at hand, it is unknown whether variables such as "primary reason for entry into care" and "agency of custody" are valid indicators of the constructs they are meant to represent. For example, in determining "primary reason for placement", did reviewers record worker opinion as to the primary reason for placement, rely on court adjudication categories, or obtain the information from the Individual/Family Service Plan (IFSP)? If all these sources of information were congruent, there would be little concern. However, since there often is more than one reason why children come into care, it is possible that the "primary reason for entry into care" could be recorded differently depending on the source of information on which reviewers relied. As is the case with "agency assigned custody", an agency would ideally be assigned custody of children according to a systematic plan (e.g. DYD has custody of all children "adjudicated delinquent/felony" and "delinquent misdemeanor") rather than which agencies particular judges prefer, the age of children or which

agencies in different counties happened to be less busy at the time adjudication decisions were made. In short, the construct validity of many variables is unknown. While there is no glaring reason to believe that the variables chosen for study do not measure what they are supposed to measure, there is no direct evidence to indicate that they do. And, when researchers rely on data collected by others (as is the case with secondary data analysis), especially when variables were defined by child welfare administrators rather than child welfare researchers, there is little hope that much attempt has been made to clearly define and objectify each variable or to systematically collect data in a manner that adheres to the more objective and strict research protocols researchers may establish.

Data Analysis

Research Study I: Predictors of Foster Care Replacement

Primary Method of Data Analysis

The primary method of data analysis was a variant of Poisson Regression called the Negative Binomial Regression Model (NBRM). To understand how the Negative Binomial Regression Model is derived, the Poisson Regression model will be discussed briefly.

As previously noted, Poisson regression lends itself quite well to the modeling of "count" outcome variables. Count variables show the number of times that an event has occurred (Long, 1997). In the case of replacement (i.e.

disruption), the count variable is the number of times that a child has changed placements. As mentioned previously, OLS regression is not appropriate for disruption outcome variables because the number of moves (and likewise the number of disruptions) is not normally distributed⁴¹.

Previous research indicates that most children experience fewer than three placements while some experience as many as ten or twelve. Conceptually, if the dependent variable (y) were to be plotted, the curve would be positively skewed with most observations clustered around the lower number of ordered outcomes (i.e. moves). The Poisson Regression model is a better model for analyzing data on disruption because it is based on the Poisson distribution rather than the normal distribution. The Poisson distribution is used to derive a likelihood function that can be maximized to provide parameter estimates, estimated standard errors, and maximized likelihood statistics (Kilenbaum, et al., 1988). Poisson regression is like all other Maximum Likelihood Estimation (MLE) procedures in that the goal is to find the value that is most likely observed in the data (the ML estimator).

Long (1997) notes that, in practice, the Poisson regression model rarely fits the data. This is because the conditional variance is often greater than the conditional

⁴¹. Long (1997) notes that as the count of an event nears or exceeds 20, the Poisson distribution will approximate the normal distribution.

mean, violating one of the primary assumptions of Poisson regression known as "equidispersion" (Long, 1997). This overdispersion occurs when there is a great deal of heterogeneity in the independent variables being studied. This heterogeneity can either be observed (i.e. differing ages and special needs of children) or unobserved (introduced through error). With overdispersion, z-tests run on the data can overestimate the statistical significance of variables (Long, 1997).

The Negative Binomial Regression Model corrects a number of problems associated with using the Poisson distribution, primarily by allowing the conditional variance of y to exceed the conditional mean. (Long, 1997). This method thus not only addresses the issue of heterogeneity but also allows for a more accurate fit of the data⁴².

Descriptive Statistics

The reader may recall that the information provided about the basic demographic characteristics of the sample drawn for the 1995 C-PORT protocol were based on an analysis of a subsample of 353 children from the study. In the present study, descriptive statistics on all germane demographic variables have been obtained and are reported for the entire sample of 658 children. In addition, basic

⁴². The Negative Binomial Regression Model is constructed by mixing the Poisson distribution with a second distribution. Long (1997) uses the gamma distribution but offers several alternative distributions.

descriptive statistics, such as measures of central tendency and variability and frequency distributions, are also reported on all variables identified to be of research interest in the present study.

Testing Variable Relationships with NBRM

Hierarchical analysis

Since MLE methods of data analysis are in many ways extensions on OLS regression models, the two methods share many commonalities, including the ability to partition variance in a hierarchical manner. Hierarchical partitioning is especially valuable in examining either individual factors or sets of factors in regression equations when there is concern that some variables of research interest are the source of spurious relationships between predictor variables and dependent variables of interest. Cohen and Cohen (1983) note that besides being valuable for the removal of spurious or confounding relationships hierarchical analysis is also valuable for establishing causal priority, research relevance and the structural properties of the research factors being studied. In establishing hierarchical priority, Cohen and Cohen (1983) suggest that each variable be entered only after other variables that may be a source of spurious relationships have been entered.

Much of the literature review section of this dissertation was devoted to examining the possible

confounding nature of predictor variables found to be associated with foster care replacement and adoption disruption. In the literature review and measurement sections of this dissertation, six variables were identified as possible causes of spurious relationships: age, length to time in care, primary reason for entry into care, court adjudication, department assigned custody and child special needs.

NBRM equations

In order to explore the relationships between predictor variables and the number of foster care placements children in Tennessee experience, six separate tests were identified for analysis using the Negative Binomial Regression Model. The tests and the order of variable entry are summarized in Figure 3 in Appendix C; nevertheless, a brief description of the data analysis plan is provided to help the reader follow the theory and rationale behind the choice of variables and their placement within the separate equations.

In equation 1, the six variables thought to be the cause of spurious relationships between predictor variables of interest and the dependent variable were entered in the first block of analysis followed by interaction equations in the second block of analysis. The first block provided information about the relationship between each individual control variable, holding the others in the equation constant, and disruption. The second block includes

information about the nature and strength of interactions among the variables thought to moderate other variables. The hypothesized relationships among the interacting variables are outlined briefly for ease in interpretation. Age is expected to moderate length of time in care, primary reason for entry into care, court adjudication, and the department assigned custody. The primary reason for entry into care is expected to moderate length of time in care. Court adjudication is expected to moderate length of time in care. The department assigned custody is expected to moderate length of time in care. The presence of special needs is expected to moderate primary reason for entry into care, the department assigned custody and length of time in care.

The second equation outlined in Figure 3 of Appendix C examined individual special needs as they relate to foster care replacement. In this equation, special needs was not entered into the first block as a control variable so that the effect of individual special needs could be examined. The third equation looked at the number of handicaps and the presence of multiple handicaps as they related to foster care replacement. Again, this equation does not contain a variable indicating the presence of a special need in the first block so that variables representing the presence of multiple special needs (dichotomous variable) and the number of special needs (continuous variable) could be examined.

In the fourth equation, parental visitation was examined as it relates to foster care replacement. It should be noted that this analysis requires hierarchical entry of variables because the six factors entered in the first block could be the cause of spurious relationships between the amount of parental visitation and the number of disruptions children experience. One obvious example would be the case of children entering care due to abandonment. These children certainly would have little if any parental visitation.

In the fifth analysis, newly created variables pertaining to increase or decrease in setting restrictiveness were examined as they related to foster care replacement. Again, by partitioning the six variables first in the equation, the relationship between other variables of interest entered into the second block of the equation could be interpreted more accurately.

Finally, the study provided for the examination of initial placement type and final placement type and the risk of disruption. Table 5 outlines the specific placement types of interest in the present research. As was discussed earlier, children on runaway status and those in biological homes were eliminated from the sample.

A decision was made to rely on six equations to describe variable relationships rather than just one for several reasons. First, as delineated above, while there is

good reason to control for child special needs when examining the relationship between some predictor variables of interest and the dependent variable (i.e. establishing causal priority, ferreting out whether variable is the cause of spurious relationships), the data sets provided a unique opportunity to examine the relationships among various types of special needs and number of placements. Separating these special needs in equations 2 and 3 allowed for hierarchical testing of these relationships. In addition, any test of interactions tends to introduce more multicollinearity into equations. By separating the tests of interactions of research interest into one equation, the risks of adding unnecessary multicollinearity problems was reduced. In equation 4, the concept of parental visitation has only been tested once in previous research (Fanshel & Shinn, 1979). The reader may recall that there was some question about the direction of the relationship. Creating a separate equation allowed the relationship between parental visitation and number of placements to be tested unincumbered by additional and unnecessary variance partitioning from additional second block variables when there was no previous theory to explain how other second block variables might interact with parental visitation. Finally, the last two equations were separated because there was some concern that unnecessary multicollinearity would be created if they were tested in the same equation.

Missing Data

In the present study, data were missing for the dependent variable for 19 of the 658 cases (2.9%). Cohen and Cohen (1983) suggest that when a value for the dependent variable is not known, the best option is to drop the subject from analysis. After excluding the 19 cases, subsequent analysis was based on a sample size of 639 children in substitute care.⁴³

Deciding how to handle missing data with the independent variables of interest primarily depends on the amount of missing data for each independent variable in the study. Most recommended methods of dealing with missing data assume that only a small to moderate proportion of data are missing. Researchers customarily advise against proceeding with analysis when independent variables contain large amounts of missing data.

Tables 6 and 7 in Appendix C present the amount of missing data for each categorical and quantitative variable of interest. Two variables, related to parental visitation of children in care, contain over 40% missing data. A decision was made to drop these variables from analysis, as it was determined that any results obtained from these variables would most likely be misleading. All of the other variables contained small to moderate amounts of missing

⁴³. Descriptive statistics are presented for the entire sample of 658 children.

data and thus were included in the analysis with some modification.

Cohen and Cohen (1993) offer an alternative to traditional means of handling missing data such as listwise and pairwise deletion. This procedure involves a process of "coding missing data". Orme and Reis (1991) illustrate the two primary steps of the procedure. The first step involves coding and analyzing the presence and absence of missing data as a way of testing the extent to which data are missing randomly (Orme & Reis, 1991). This is accomplished by creating a dichotomous variable indicating whether missing data are present for each variable⁴⁴. The second step involves the substitution of a constant value (such as the mean value for that variable) for all cases with missing data. The variable with the substituted constant is also entered into the subsequent regression equation. For the present study, mean substitution is used.

In the present study, in cases where missing data for any given variable was less than 5%, mean substitution was used, but a dichotomous variable containing information about the extent to which the data are missing randomly was not included in the regression equation. This is because the variance of the missing data variable will be small,

⁴⁴. For example, the variable would be recoded with a value of "1" indicating that there is missing data for a particular case of a particular variable and a value of "0" if there is no missing data for a particular case of a particular variable.

constraining its correlation with other variables and resulting in reduced error degrees of freedom and therefore reduced power and precision for the regression model (Cohen & Cohen, 1983). Cohen and Cohen (1983) suggest that both steps involved in "coding missing data" be done only when there are moderate amounts of missing data (more than 5%).

Coding Nominal Variables

Most of the variables used in the analysis are nominal-level variables, which required coding prior to analysis. All nominal-level variables for this study were effects-coded prior to being entered into equations, as it was determined that comparison to the mean of all groups of the variable would be more meaningful than comparison to just one reference group as would be the case with dummy coding. The unstandardized slope, bivariate correlation, partial correlation and semipartial correlation are not interpretable in such cases.

Research study II: Developing and Testing a Typology of Disruptions

As noted above, the primary purpose of this portion of research was to examine the types of placements that children have experienced and to categorize these placements according to the disruption typology outlined in Figure 2. Table 5 outlines some of the variables included in C-PORT and CORS that were used to reconstruct many of the reasons why children moved. However, the C-PORT and CORS data sets

do not provide all the reasons why placements disrupted, therefore, not all placements are represented in the table.

There was a second limitation with this exploratory research. It is conceivable that one child can experience several moves that as a group are precipitated by reasons represented in all four quadrants of the typology. For example, a child could first live in a temporary shelter awaiting the opening of a foster home (quadrant IV). He could then later move to a pre-adopt foster home (quadrant I) which disrupts. He is then placed in a more restrictive setting (quadrant III) but moves to live with his grandparents several months later (quadrant II). By virtue of the fact that children can be represented in several quadrants during their tenure in foster care, observations are not independent. Thus, it would be inappropriate to use most statistical procedures to analyze the data on the individual or child level, as most statistical procedures require that observations be independent. Nevertheless, there were some things that could be learned using the disruption typology with these secondary data that were not expressly designed to test this typology.

Moving from an individual level analysis to organizational level analysis can provide a framework for future organizational research. This could be accomplished by counting the total number of moves experienced by the entire sample and by filling in the quadrants when it is

possible. For example, the proportion of placements where children are moved to more or less restrictive settings, the proportion of placements that are in temporary settings, the proportion of placements with the goal of long term foster care or adoption and so forth were determined. (The reader is reminded that Table 5 outlines some variables from the combined C-PORT and CORS data bases which may be useful in classifying replacements.)

It was hoped that by examining placements on an aggregate level, a picture could emerge as to the proportion of overall placements falling into each quadrant of the table. Earlier, it was suggested that merely counting the number of moves children experience provides little information about how many moves are reasonable or appropriate. This framework provides a way for Tennessee and other states to assess the appropriateness and reasonableness of replacements. By determining the proportion of moves associated with permanency planning and those associated with systemic issues using a uniform typology, individual programs may have a benchmark to test service interventions designed at reducing disruption and to examine foster care service systems between counties. Furthermore, programs or states may be able to be compared according to a realistic standard of performance. The implications of results are discussed further following data analysis.

CHAPTER IV

RESULTS

Research Study I: Predictors of Foster

Care Replacement

Descriptive Statistics

Sample Characteristics

A review of the 1995 C-PORT data revealed the following demographic information about the sample of 658 children. The mean age of children at the time of the C-PORT interview was 12.4 years (SD = 5.5). At the time of entry into care, the mean age was 10.1 years (SD = 5.7). More males were in care than females (54.9% vs. 45.1%). Most of the children in care were of Caucasian heritage (65.5%), followed by children of African American heritage (29.6%). The remaining 5.0% of children were of either Hispanic, Asian, mixed-race or other racial backgrounds. The mean length of time in care was 805 days, just a little over two years (M = 2.2, SD = 2.2).

At the time of the 1995 C-PORT interview, the vast majority of children were in care subsequent to a dependency neglect/abuse adjudication (58.7%), followed by adjudications for unruly behavior (14.9%), felony delinquency (8.9%), misdemeanor delinquency (8.4%), assessment (4.5%) and other adjudications (4.4%)^{45 46}.

⁴⁵. Some children in substitute care are court adjudicated on more than one occasion as they matriculate in and out of the child welfare system. For example, a child

Custody was given to the Department of Children's Services (DCS) in 80.1% of the cases, the Department of Youth Development (DYD) in 14.7% of the cases, the Department of Mental Health in 1.1% of the cases, and the Department of Education in 1.7% of the cases⁴⁷. The most prevalent reasons for removal were child behavior problems (29.5%), neglect by caretaker (26.1%), physical abuse by caretaker (7.3%) and sexual abuse by caretaker (6.4%).

The children were placed in one of four placement categories: family (25.2%), foster (37.1%), group (26.9%) and runaway (4.4%). "Family" placements include children placed with birth or adoptive parents, other relatives or children living independently. "Foster" placements include DHS regular or therapeutic foster homes, regular or therapeutic foster homes through contract agencies, and DYD

can initially enter care on an adjudication of neglect and then be returned to his/her biological home after conditions have been remedied. That same child may later enter care because of unruly behavior. Demographic information provided here and subsequent analysis of the adjudication variable was based on the child's most recent adjudication.

⁴⁶. Children in care because of unspecified delinquency, emergency mental health commitment, Tennessee Department of Mental Health Mental Retardation commitment and voluntary placement were classified as "other" because of inadequate cell sizes for meaningful statistical analysis.

⁴⁷. In subsequent analysis, children placed in the custody of Tennessee Department of Education and those placed in the custody of Tennessee Department of Mental Health were combined for the purpose of obtaining adequate cell sizes for meaningful analysis.

foster homes. "Group" placements refer to any congregate living environment ranging from Level 1 classified low intensity group homes through residential treatment, wilderness programs, and institutional placements such as psychiatric hospitals and Department of Youth Development centers. The mean number of placements experienced by these children was 3.5 (SD = 3.1) with a range from one to twenty-two placements. Information regarding specific placements is reported in Table 6.

Results indicated that a large number of children had emotional and/or behavioral problems (68.4%)⁴⁸. In fact, 36.0% of the children had received an Axis I or Axis II diagnosis using the DSM III-R, DSM IV or ICD/ICM, three manuals commonly used to classify and diagnose mental illness in mental health settings. Fewer children exhibited other disabilities, with alcohol/substance abuse (21.7%) and non-MR developmental disabilities (15.8%) being the most prevalent. All in all, 76.7% of the sample children had at least one recorded disability from the six categories outlined in Table 5, and 37.5% of the children experienced disabilities in more than one of the six categories (i.e. multiple disabilities). Additional information about the

⁴⁸. Appendix B outlines those variables used to determine whether an emotional and/or behavioral problem was present. For this and other special needs variables, interviewees and case records need only to have affirmingly indicated the presence of the special need on one question to have that special need indicated as present.

sample is provided in Tables 6 and 7.

Interviews

Table 8 in Appendix C provides information about the number of interviews conducted on the eight possible individuals targeted for each child in the C-PORT interview process. As can be seen, the vast majority of the custodial department workers (termed Department of Children's Services or DCS workers in Tennessee) were interviewed (97.85%) as were most ACCT workers (98.1%). Roughly two-thirds of the caregivers, youth and court representatives were interviewed. The lowest interview rates were for biological parents (45.5%), teachers (24.9%), and other providers such as therapists and staff at group, residential or psychiatric facilities (37.1%). C-PORT variables chosen for analysis were extracted from the demographic information obtained by reviewers from case records, court records and/or interviews as well as interviews with DCS and ACCT workers. No questions were extracted from interviews with the remaining six individuals involved with the case, primarily because of low response rates but also because the questions asked of these individuals did not directly relate to the topic of interest and/or they did not provide additional information above that obtained from other sources (i.e. CORS data base, similar or duplicate questions asked in higher response areas of the C-PORT protocol).

Variables Used in NBRM Equations

Tables 6 and 7 also contain descriptive information about the categorical and quantitative variables used in the NBRM equations. Some of these variables have been discussed in the section describing sample characteristics. Following is a brief discussion of the remaining independent and control variables used in the NBRM analysis.

The primary reasons given for removal from biological/adoptive homes and placement into care were child behavior problem (36.3%) and neglect (28.8%). In fact, these two reasons comprise 65% of substitute care cases in Tennessee. A much smaller percentage of children were in care because of physical abuse, sexual abuse, other caretaker reasons or other child reasons.

While foster homes seemed to be the placement of choice, there were some differences between the most prevalent first placements and the most prevalent placements at the time of the C-PORT interview. The most common initial placements were foster homes (41.3%), emergency shelters (12.7%), diagnostic shelters (7.5%), intensive residential or psychiatric hospitals (7.5%), and other group homes (7.5%)⁴⁹. The most prevalent placements at the time

⁴⁹. Despite the large sample size, many placements contained too few children for meaningful analysis. Therefore, some placement categories were collapsed to provide large enough cell sizes for meaningful analysis. For example, "other group setting" contained children in Department of Youth Development group homes (n = 2), residential treatment level 2 and level 3 placements (n = 17

of the C-PORT interview were foster homes (33.0%), birth/adoptive homes (12.6%) and relative homes (8.0%). Using the proposed restrictiveness coding displayed in Figure 1, nearly half of the children began placements in family settings (49.8%), about a third in group settings (28.1%), and just 12.8% in lock down facilities. After some time matriculating through placements, very little change occurred for the sample overall in terms of the use of more or less restrictive environments, as 49.5% of the children were in family settings, 19.0% in group settings and 9.4% in lock down facilities at the time of the C-PORT interview. As the placement frequency distributions in Tables 6 and 7 (Appendix C) show, although the proportion of children in one restrictiveness type did not change much, the actual placement type did. Children in family settings were more apt to be in biological/adoptive or relative homes after some time in care rather than in foster homes. In addition, children in group home settings were more apt to be in residential treatment after some time in care rather than in emergency or diagnostic shelters.

The created change in restrictiveness variable also shows little movement between restrictiveness settings for individual children. Only 12.3% of the children moved to more restrictive settings between first placement and last placement on record. Likewise, only 16.6% of the children

and 11 respectively), and Wilderness programs (n = 3).

moved to less restrictive settings between first and last placement on record, while 71.1% of the children remained at the same level of restrictiveness.

Of particular disappointment in the preliminary analysis was the discovery that the variables indicating the frequency of visitation for both the biological mother and father contained inordinate amounts of missing data. Data were missing for 42.2% of the cases for the biological mother's visitation patterns and 51.5% of the cases for the biological father's visitation patterns. Consequently, these variables were dropped from the analysis.

OLS Results

Regression Equations

In this dissertation, much criticism has been leveled at the use of OLS regression analysis when examining relationships between predictor variables and disruption, and it has been proposed that NBRM equations may do a better job of explaining disruption patterns. As a point of reference, the same predictor variables later used in the NBRM were regressed on number of placements using linear multiple regression. The results of the OLS analysis can be found in Table 9 in Appendix C. Nevertheless, a brief discussion of the analysis follows.

As has been discussed previously, the first regression equation contained two steps. The first was developed to test the relationship among six variables thought to be the

cause of spurious relationships between other predictor variables and the dependent variable of interest. These six variable groups were entered first in each hierarchical analysis to reflect their status as control variables⁵⁰. The variables were child age, length of time in care, primary reason for entry into care, court adjudication, department assigned custody and child special needs. As Table 9 illustrates, the Step 1 model was significant.

It was predicted that older children, those with special needs and those in care longer would be more likely to disrupt controlling for other variables in the equation. As predicted, older children were more likely to disrupt as were those with special needs. Length of time in care was not related to the number of moves children experienced. It was also predicted that primary reason for entry into care would be related to disruption with some reasons being related to increased chance of disruption and other reasons being related to lower risk of disruption⁵¹. Physical abuse, sexual abuse, neglect, child behavior problems and other child problems were not related to disruption. The variable depicting other caregiver reasons (such as

⁵⁰. Reason for entry into care, court adjudication and department assigned custody were effects coded.

⁵¹. The reader is reminded that while a primary reason for entry into care can often be identified, children often come into care for many reasons. Some of the secondary reasons for entry into care may be just as damaging to children despite not receiving due attention from caseworkers and judges.

voluntary relinquishment and illness or incapacity of caregiver) was found to be positively related to disruption. It is not clear what can be interpreted from these findings since, despite the large sample size, the incidence of these other caregiver reasons was so rare that small cell sizes made it impossible to examine each reason independently.

It was also predicted that court adjudication would be related to disruption, with some adjudications being related to increased chance of disruption and other adjudications being related to lower risk of disruption. Those children adjudicated dependency neglect/abuse were less likely to disrupt as were those with "other" adjudications. Again, the "other" variable contained many reasons (such as voluntary placement, non-specified delinquency and emergency mental health adjudication) grouped together because of low cell size (i.e. rare frequency of occurrence). Not much can be interpreted from this variable.

Finally, it was predicted that department assigned custody would be related to disruption with some departments being related to increased risk of disruption and other departments being related to decreased risk of disruption. As predicted, children in the custody of the Department of Youth Development were more likely to disrupt. This may be because children in DYD custody almost always enter care because of behavioral problems. Interestingly, those in the combined variable for the Department of Mental Health and

the Department of Education were less likely to disrupt. This was an important variable to attend to when analyzed with the NBRM because, if significant, this may point to the success of specialized programs and institutions for minors with mental health problems and intellectual disabilities.

The second step was designed to test hypothesized interactions in this rather complex model. As Table 9 shows, there was a positive relationship between special needs and disruption for children not entering care for sexual abuse. There was a negative relationship between special needs and disruption for those entering care because of sexual abuse. This interaction is illustrated in Figure 4 (Appendix C). Secondly, a positive relationship existed between length of time in care and number of placements, but this relationship was much stronger for children in the custody of the Department of Youth Development. This interaction is illustrated in Figure 5 of Appendix C. Additionally, as Figure 6 illustrates, there was a positive relationship between length of time in care and number of placements, but this relationship was stronger for children with behavior problems. As Figure 7 of Appendix C illustrates, there was a positive relationship between length of time in care and disruption, but this relationship was stronger for children entering care because of caregiver problems other than child physical or sexual abuse or neglect. Finally, there was a positive relationship between

child age and disruption, but this relationship was stronger for children in care because of caregiver difficulties other than child physical or sexual abuse or neglect. This interaction is illustrated in Figure 8 located in Appendix C. The interaction effects entered in Step 2 add significantly to the model.

In equation 2, the variable indicating the general presence of a special need was not entered in the first block of the equation, as the six individual special needs categories were subsequently tested in the second block of the analysis. Based on the literature review, it was predicted that children suffering with emotional and/or behavioral problems would be more likely to disrupt. This was not the case. In fact, of the six special needs tested, only one, the presence of alcohol and/or substance abuse problems was linked to increased risk of disruption. Nevertheless. Step 2 variables added significantly to the overall predictive ability of the model.

In equation 3, once again the variable indicating the general presence of special needs was eliminated from the first block of the analysis in order to test the effect of the presence of multiple special needs and the number of special needs (an interval level variable indicating the number of special needs categories in which children met the criteria for inclusion). Surprisingly, neither the number of special needs nor the presence of multiple special needs

were significantly related to disruption, and the model was not improved by inclusion of these variables.

Since equation 4 was eliminated from analysis due to large amounts of missing data in the independent variables of interest, equation 5 was analyzed next. The six control variables used in equation 1 were entered in Step 1 of equation 5. In Step 2, effects-coded restrictiveness-of-setting variables were entered. Results indicate that children living in more restrictive settings at the time of C-port interview were more apt to have experienced additional moves than the overall sample. Children who remained in the same level of placement restrictiveness experienced significantly fewer placements than the overall sample. Children in less restrictive settings at the time of interview did not experience more or less frequent moves than the overall sample. Here, the restrictiveness of setting variables did add significantly to the ability of the overall model to explain disruption.

In the final equation, initial and current placement type were examined in relationship to number of moves. In regard to initial placement type, those initially placed in emergency shelters were more apt to experience additional placements than the overall sample. Children initially placed in emergency shelters, which are usually designed to be more temporary than other placements (usually 30 days or less), most likely would have more placements overall. None

of the seven other variables representing placement type were significantly related to number of placements.

In regard to placement type at the time of C-PORT interview, children on runaway status and those in "lock down" facilities had significantly more placements than the overall sample. Those in residential treatment - level 1 facilities, those in therapeutic foster homes and those in general foster homes had significantly fewer placements than the overall sample. Again these Step 2 variables added significantly to the model's predictive ability.

Testing Assumptions

Earlier in this dissertation, much discussion centered around violations of OLS model assumptions that may make this model inappropriate for disruption data when one is regressing data on a dependent variable counting the number of moves or the number of disruptions children experience. This is because number of moves and number of disruptions are not normally distributed, a crucial assumption with OLS regression. In fact, as noted earlier, the mean number of placements in the present sample is 3.5 with a range from 1 to 21. As Figure 9 in Appendix C illustrates, the dependent variable is clearly positively skewed. Secondly, as Figure 10 illustrates, the data are also heteroscedastic, violating the homogeneity of variance assumption. Nevertheless, a review of all equations revealed that the data contained no influential outliers.

Missing Data Variables

The vast majority of variables used in the equations contained less than 5% missing data. As planned, mean substitution was used. Three variables had moderate amounts of missing data: "restrictiveness of care change", "length of time in care", and "reason for removal". With these variables mean substitution was used in conjunction with the creation of a dichotomous variable including information about the presence or absence of missing data, which was entered into the equation in the same block in which the variable containing moderate amounts of missing data were entered. Neither of the missing data variables for length of time in care or reason for removal were significantly related to the dependent variable "number of placements", indicating that the missing data were most likely missing randomly. However, there was a significant relationship between the restrictiveness of care change variable used in block 2 of equation 5 and the dependent variable, indicating that these data may not be missing randomly, meriting caution in interpreting results. Table 9 of Appendix C contains information about the relationship between these three missing data variables and number of disruptions.

NBRM Results

Data Preparation

Data were prepared for analysis using the Negative Binomial Regression model in the same manner as the OLS

regression. All nominal-level variables were effects-coded. Mean substitution was used with variables containing less than 5% missing data. Coding missing data was also used for variables containing more than 5% missing data.

Overdispersion

Earlier, a rationale was provided as to why the NBRM was chosen over the more widely known model for count data, the Poisson regression model. This is because, in practice, the Poisson regression model rarely fits the data (Long, 1997). This is because the conditional variance is often greater than the conditional mean, a situation which violates one of the primary assumptions of Poisson regression known as "equidispersion" (Long, 1997; Gardner, Mulvey & Shaw, 1995). This overdispersion is often caused when there is a great deal of heterogeneity in the independent variables being studied. This heterogeneity can either be observed (i.e. differing ages and special needs of children) or unobserved (introduced through error). With overdispersion, z-tests run on the data can over estimate the statistical significance of variables (Long, 1997). The Negative Binomial Regression Model corrects a number of problems associated with using the Poisson distribution, primarily by allowing the conditional variance of y to exceed the conditional mean (Long, 1997). This correction not only addresses the issue of heterogeneity but also

allows for a more accurate fit of the data⁵².

As planned, all NBRM equations were tested for overdispersion. Results indicate that every equation contained overdispersed data ($p = <.001$), making the NBRM the most appropriate data analyses choice for this data set.⁵³

Equation 1

In equation 1, the six variables hypothesized to have a confounding effect on the independent variables of interest were first examined⁵⁴. As was the case with the OLS regression, child age and special needs were significantly related to an increased number of placements for sample children. Of the effects-coded variables indicating the primary reason for entry into care, the variable indicating "other caregiver problems" was similarly significant. As was discussed previously, this variable contained several caregiver related reasons (such as illness and alcohol or substance abuse) which contained cell sizes too small to be

⁵². The overdispersed Poisson model also offers a method of correcting for overdispersion in the data, and it is also appropriate for use in many circumstances. Gardner, Mulvey and Shaw (1995) provide a good overview of the three models using sample data, providing insight into when each model may be most appropriately used.

⁵³. Many statistical packages provide estimates of the data overdispersion, or it can be calculated fairly easily (see Long, 1997).

⁵⁴. The reader is reminded that the variables and order of entry in the data analysis plan are presented in Figure 3.

interpreted separately. Thus, not much can be inferred from this finding.

As was the case with the OLS regression, NBRM regression with the effects-coded variables representing court adjudication, yielded the same two variables as being significantly related to number of placements: dependency/neglect abuse adjudications and "other" adjudications. Again, the "other" category represented several adjudications which occurred too infrequently to be examined separately. In both situations, dependency/neglect/abuse was related to increased placements, and "other" adjudications were related to fewer placements.

Finally, like the OLS regression, children in the custody of the department of Youth Development were more likely to experience additional placements than those in the custody of the Department of Children's Services or the combined category representing the Department of Mental Health and the Department of Education.

With the NBRM, length of time in care was also identified as being related to number of placements. However, the direction of the slope indicates that children in care longer experience fewer disruptions than those in care for shorter periods of time, which is the opposite of what one might expect and the opposite of what previous research has found.

There was some initial thought that there may be a curvilinear relationship between length of time in care and number of placements, accounting for the unusual results. However, the presence of a curvilinear relationship could not be tested using the NBRM because of the extent of multicollinearity in the data. To make this explanation more clear, it is necessary to describe the steps used to examine the effectiveness of the model overall as well as how to determine whether additional variables add to the predictive ability of the model. With OLS regression, blocks of variables were examined hierarchically using R change to determine whether variables hypothesized to be related to number of placements accounted for significant amounts of variance above and beyond the variance accounted for by the six control variables which were either previously found to have a confounding effect on the predictor variables of interest or were hypothesized to have a confounding effect on the predictor variables of interest.

With the NBRM, data were handled a bit differently because the data were not able to be entered hierarchically as they would be with OLS regression models. Nevertheless, the same results were obtained when testing for the effectiveness of the overall model. First, the Log-likelihood function for the constant was obtained. The log-likelihood function for the first order variables (i.e. the six control variables in step 1 of the equation) as well as

the constant was then obtained. A Chi-square value was obtained using the formula: $2[(\log \text{ likelihood constant}) - (\log \text{-likelihood first block})]$, df = number of additional independent variables in model. A probability value for the Chi-Square statistic was then obtained. To determine whether the second order variables added to the overall model, the constant and first order variables were entered into the equation and a log likelihood value was obtained. Then, the constant and first and second order variables were entered into the equation with a log-likelihood value for all variables of interest being obtained. The log-likelihood value for the first order variables and the log-likelihood value for the combined first and second order variables were used in the above equation, which yielded a second Chi-Square statistic, which was then used to obtain a probability value for that statistic. If the Chi-Square statistics for an equation were statistically significant, then the variable block in question was determined to significantly add to the overall predictive ability of the model.

To test for curvilinearity for length of time in care using OLS regression, each value of the variable representing length of time in care was squared, thereby creating a new variable representing the power polynomial. The length of time in care variable was entered in the first block of the equation, and the variable representing the

power polynomial was entered into the second block of the equation. With OLS regression a curvilinear relationship is demonstrated if R^2 Change is significant. With the NBRM, a curvilinear relationship would be demonstrated if the Chi-Square statistic for the second order variables is significant. However, when entering the power polynomial in the equation representing both the first and second order variables (i.e. constant, six control variables and power polynomial), an error message appeared most likely because serious multicollinearity problems were created between the variable representing length of time in care and the power polynomial representing length of time in care squared. Thus, the curvilinearity of length of time in care when regressed on number of placements could not be determined using the NBRM.

The reader may recall that, in his study of foster children from public social service agencies in 38 states, Pardeck (1984) dichotomized the length of time variable to represent children in care for greater than three years and those in care for less than three years. Pardeck made the decision to dichotomize length of time in care because preliminary analysis suggested that children did not necessarily continue to experience larger numbers of placements as their time in care increased but rather that time in foster care seemed to be a dichotomous variable with three years in care being the critical point at which

children tended to experience more placement instability.⁵⁵

Following Pardeck's (1984) lead, a second attempt at defining the relationship between length of time in care and number of placements was attempted. First a dichotomous variable representing length of time in care for three years was created ("1" in care three or more years, "0" in care less than three years). A dichotomous variable representing length of time in care for two years was also created ("1" in care two or more years, "0" in care less than two years) to see whether a pattern of relationships could be detected. Each of these variables were entered into block 1 of equation 1 separately in lieu of the interval/ratio level length of time in care variable used in previous analyses. While the dichotomous variable representing length of time in care for two years had a positive regression coefficient, the relationship between length of time in care and number of placements was not statistically significant, holding all other variables in the equation constant. The dichotomously coded variable representing length of time in care for three years was statistically significant, but the regression coefficient was again negative, indicating that children in care three years or longer were apt to have fewer placements than those in care less than three years. Unfortunately, dichotomizing the length of time in care variable did little

⁵⁵. Pardeck (1984) also found many compelling reasons to treat length of time in care as a control variable as was done with the present analysis.

to shed light on the nature of its' relationship with number of placements.

Finally, given that the variable representing length of time in care was positively skewed, the 31 children who remained in care two standard deviations above the mean length of time were examined. These children were in care from 2850 days (7.8 years) to 4906 days (13.4 years). By representing the top 5% of children in care the longest, these cases accounted for much of the skewness observed. As Figure 11 (Appendix C) demonstrates, these children are markedly different from the overall sample in many ways.

First, children in care the longest were on average older, and they had fewer placements. These children entered care at younger ages, and they were all in the custody of the Department of Human Services. With the exception of one child, those in care the longest were also adjudicated dependent/abused/neglected, and no workers identified the primary reason for entry into care to be child behavior problems (compared to 36.6% of children in the overall sample). And, while there is little difference between those in care the longest and the overall sample in terms of the number of special needs, more children in the sample of children in care the longest actually had a general special need, an emotional and/or behavioral problem and multiple special needs, despite being in more stable placements.

Finally, those in care the longest were also placed exclusively in foster homes, emergency shelters and group home facilities as initial placements. None were living with their biological parents at the time of the C-PORT interview, and the majority were living in foster homes.

Despite the difficulties explaining the significant length of time in care variable and its positive regression coefficient, the model in block 1 of equation 1 which contained the six control variables was statistically significant as was the case with the OLS regression. Table 10 in Appendix C provides specific log-likelihood functions and Chi-Square values for this block of analysis.

The length of time in care variable in the first block of equation 1 could not be explained because the NBRM does not allow appropriate testing of curvilinear relationships. The product variables entered in step two of equation 1 to test for interaction effects could also not be analyzed and interpreted for the same reason. When all the variables in the last block were analyzed, an error message was provided by the statistical package indicating that a solution value could not be found.

As a general rule, considerable multicollinearity can be introduced into a regression equation when interaction terms are being examined. This is because the highest order term (i.e. the power polynomial entered in Step 2 of the equation) can produce large standard errors for the

regression coefficients associated with the lower order terms, although the standard error of the highest order term is unaffected (Aiken & West, 1991). This creates spuriously high correlations between the independent and dependent variables of interest (i.e. x and y). Because of these problems, centering is often recommended (Aiken & West, 1991; Cohen & Cohen, 1983). Centering involves subtracting the mean from each x variable score. This rescaling has no effect on the correlational properties of the rescaled variables and no effect on the standard errors of the first order slopes or the t -tests for the centered variables (Aiken & West, 1991). Centering is appropriate for continuous predictor variables but is not appropriate for categorical predictor variables where the interest is in regression within the distinct groups themselves rather than at the value of the weighted mean (Aiken & West, 1991). In the present study, all continuous predictor variables were centered, but the error messages remained when running the NBRM with the last block of variables containing the constant, the six control variables and the interaction terms.

Since it was not possible to assess the influence of interaction effects on specific variables of interest while holding other variables in the equation constant, each group of effects-coded variables of interest was entered into the second block of analysis separately. For the variables

representing court adjudication (i.e. assessment, delinquency/felony, delinquency/misdemeanor, dependency/neglect/abuse, and unruly) as moderated by age, no product variables were significantly related to number of placements, indicating that no interaction effects were found between these variables of interest. For the effects-coded variables representing the reason for removal (i.e. neglect, physical abuse, sexual abuse, child behavior problems, and other caregiver problems) as moderated by age, an interaction effect was present for the product variable representing the interaction of age and physical abuse. More specifically, there was a positive relationship between age and number of placements for children entering care because of physical abuse. There was a negative relationship between age and number of placements for those entering care for reasons other than physical abuse. A negative relationship also existed between length of time in care and "other" caregiver problems, but this relationship was stronger for children who were not removed because of "other" caregiver difficulties.

Length of time in care also interacted with child behavior problems, demonstrating a positive relationship between length of time in care and number of placements for children who had behavior problems but a negative relationship between length of time in care and number of placements for children who did not have behavior problems.

Length of time in care also interacted with court adjudication type with children adjudicated dependent/neglected/abused having fewer placements than those who were not adjudicated dependent/neglected/abused. It is quite possible that children adjudicated dependent/neglected/abused would not have the behavior problems on average that children adjudicated unruly or delinquent. Thus, the interaction between length of time in care and behavior problems and the interaction between length of time in care and dependency/neglect/abuse seem to correspond quite well even though these interactions were identified in separate analyses.

The final set of interactions found to be significant when examining the relationship between blocks of individual effects-coded variables involves the relationship between length of time in care and the department assigned custody. The reader may recall that three effects-coded variables were constructed to represent the construct "department assigned custody". These three variables represented children in the custody of the Department of Children's Services (DCS), children in the custody of the Department of Youth Development (DYD) and children in the custody of either the Department of Mental Health (DMH) or the Department of Education (DED).⁵⁶ A negative relationship

⁵⁶. Small cell sizes made it necessary to combine children in the custody of the two departments. In Tennessee, both departments have specialized services to

existed between length of time in care and number of placements for children in DHS custody. A positive relationship existed between length of time in care and number of placements for children not in DHS custody. A positive relationship also existed for length of time in care and number of placements, although this relationship was much stronger for children who were in DYD custody.

The results describing the interaction between department assigned custody and length of time in care may be a byproduct of which children are selected to enter DYD custody and which are selected to enter DCS custody. As mentioned earlier, these two may also interact with age. Customarily, children in DYD custody enter because of status offenses (being adjudicated unruly) or because of criminal behavior (being adjudicated delinquent/misdemeanor or delinquent/felony). Children who enter DCS custody more often enter because of things that happened to them in their birth homes rather than things they did to make their homes unsafe. A young child with few behavior problems is unlikely to enter DYD custody. Such a child is likely to enter DCS custody. This example underscores the importance of examining interaction effects while holding other interactions in the equation constant. This is not possible with the NBRM most likely because of high levels of

deal with disabilities stemming from mental illness or intellectual limitations.

multicollinearity in the data. While examining interaction effects with individual variables (which have been effects-coded) may be somewhat more informative than ignoring the possibility of interaction effects with this complex set of variables, results should be interpreted with caution because other interaction effects were not taken into account.

Despite squaring each variable separately, there continued to be an error message for the interaction term representing age x length of time in care even though no other interaction terms were entered into the equation. This message continued even after centering both age and length of time in care before creating the power polynomial. Thus, no assessment could be made about the nature of any interaction between these two variables. This is most likely due to low tolerance.

Equation 2

The reader may recall that in equation 2, the variable indicating the general presence of a special need was not entered in the first block of the equation, as the six individual special needs categories were subsequently tested in the second block of the analysis. Based on the literature review, it was predicted that children suffering with emotional and/or behavioral problems would be more likely to disrupt. While the presence of emotional/behavioral problems was not significantly related

to number of placements in the OLS regression, a significant positive relationship did exist with the NBRM. The reader may recall that it was initially predicted that children with emotional and/or behavioral problems would experience more placements. As was the case with the OLS regression, the presence of alcohol and/or substance abuse problems was linked to increased risk of disruption using the NBRM. Results indicate that the Step 2 variables added significantly to the overall predictive ability of the model. NBRM results and model improvement statistics for equation 2 are given in Table 10 in Appendix C.

Equation 3

In equation 3, once again the variable indicating the general presence of special needs was eliminated from the first block of the analysis in order to test the effect of the presence of multiple special needs and the number of special needs (an interval level variable indicating the number of special needs categories in which children met the criteria for inclusion). As was the case with the OLS regression, neither the number of special needs nor the presence of multiple special needs were significantly related to disruption, and the model was not improved by inclusion of these variables.

Equation 5

Since equation 4 was eliminated from analysis due to large amounts of missing data in the independent variables

of interest, equation 5 was analyzed next. The six control variables used in equation 1 were entered in Step 1 of equation 5. In Step 2, effects-coded restrictiveness of setting variables were entered. As was the case with the OLS regression, children living in more restrictive settings at the time of C-port interview were more apt to have experienced additional moves than the overall sample. And, like the OLS, NBRM results indicated that children who remained in the same level of placement restrictiveness experienced significantly fewer placements than the overall sample. Children in less restrictive settings at the time of interview did not experience more or less frequent moves than the overall sample. Here, the restrictiveness of setting variables did add significantly to the ability of the overall model to explain disruption. Table 10 in Appendix C provides detailed information about the relationship between variables of interest and number of placements as well as information about the model improvement.

Equation 6

In the final equation, initial and current placement type were examined in relationship to number of moves. With the OLS regression, one initial placement type, the emergency shelter, was related to an increased chance of experiencing additional placements. No initial placement types were associated with a decreased chance of

experiencing additional placements. With the NBRM, two of the eight initial placement types were related to increased probability of experiencing additional placements. As was the case with the OLS regression, children initially placed in emergency shelters were more apt to experience additional placements. This relationship had been hypothesized to exist since emergency shelters are usually designed to be more temporary than other out of home placements (usually 30 days or less). These children would be expected to have more placements overall. Secondly, children in "other group" settings were less likely to experience disruption. The reader may recall that "other group" contained a cluster of placements that were group-like in nature but could not be categorized with residential treatment, psychiatric or "lock down" facilities. Included in this group are DYD group homes and wilderness programs. These placements were not able to be analyzed separately due to small cell sizes. Nevertheless, a clear pattern has begun to emerge that the NBRM is able to identify additional variables as significantly related to number of placements.

In regard to placement type at the time of C-PORT interview (i.e. last placement examined), children on runaway status and those in "lock down" facilities had significantly more placements than the overall sample with the OLS regression. The same held true with the NBRM. With the OLS, children in residential treatment - level 1

facilities, those in general foster homes and those in therapeutic foster homes were found to have significantly fewer placements than the overall sample with the OLS regression. This was also the case the NBRM. This finding may point to the selection of younger, more emotionally healthy children to be placed in the least restrictive, most family-like setting or it could point to the stability of foster homes overall for children entering care. In addition, older, more emotionally healthy children may be more likely to be placed in the lowest level residential treatment facility.

The step 2 variables representing initial placement type and placement type at the time of the C-PORT interview did add significantly to the model's predictive ability. Results are in Table 10 of Appendix C.

Odds Ratios

Like other Maximum Likelihood Estimation procedures, the NBRM allows one to determine the strength of relationships between variables of interest while controlling for other variables in the model. This is accomplished using an odds ratio ($\exp[B]$), which is defined as the probability that an event will occur divided by the probability that an event will not occur. Odds ratios provide insight into how changes in the independent variable would affect changes in the dependent variable of interest, holding other variables in the equation constant. In other

words, the odds ratio can be used to help predict factor or percentage changes in the expected count of the dependent variable⁵⁷. In the present study, the odds ratio was used to predict how changes in values of the independent variables of interest would increase or decrease the expected number of placements sample children would experience. While only the odds ratios for variables found to be significantly related to number of placements are presented here, Table 10 of Appendix C presents odds ratios for all variables tested in the equations.

In Block 1 of Equation 1, where the six control variables were examined, the variable indicating the presence of special needs showed an odds ratio ($\text{Exp}[B]$) of 1.3, indicating that having a special need increased the expected number of placements by a factor of 1.3 holding all other control variables constant. Using the formula: $100[\text{Exp}(B)-1]$, the factor change or expected count can be interpreted as showing that having a special need increased the expected number of placements children experience by 31% holding all other variables constant.⁵⁸ Other caregiver problems, the only effects-coded reason for entry into care that was significant in the model, showed an odds ratio of

⁵⁷. Long (1997) presents several ways to obtain expected values of count variables and the distribution of counts when interpreting count models such as the NBRM.

⁵⁸. $\text{Exp}[B] = \text{Exp}(.27) = 1.3$
 $100[\text{Exp}(B)-1] = 100[\text{Exp}(.27)-1] = 31.0$ or 31%

1.22, indicating that coming into care for "other caregiver problems" increased the expected number of placements a child experiences by 22.38% ($100[\text{Exp}(B)-1]$). As has been mentioned previously, it is unclear just what can be interpreted from this variable because "other caregiver problems" contained a hodgepodge of reasons for entry into care (such as illness and alcohol or substance abuse) with such rare occurrences that they could not be examined individually because of inadequate cell sizes. The odds ratio representing children in the custody of the Department of Youth Development (DYD) was 1.34, indicating that being in DYD custody increased the expected number of placements a child experiences by 34.3% holding all other control variables constant ($100[\text{Exp}(B)-1]$). On the other hand, entering care with the adjudication of "dependency/neglect/abuse" decreased the expected number of placements by 19.02% holding all other variables in the equation constant (odds ratio = .809).

The final control variables significantly related to increased chance of replacement, child age and length of time in care, were measured in days, making odds ratios and expected percentage changes look rather trivial at first blush. It was more meaningful to examine these odds ratios in relationship to the number of years old a child was or the number of years a child was in care. For example, each additional year of age increased the expected number of

placements by 5.2% holding other variables in the equation constant.⁵⁹ Also, each additional year that children spent in care decreased the expected number of placements by 3.59%. (As has been mentioned previously, the length of time in care variable was not found to be significant with the OLS regression. With the NBRM, it is in a direction opposite of what would be expected with children in care longer experiencing fewer placements.)

The reader may recall that in block 1 of equation 2 the special needs variable was eliminated so that the effect of individual special needs categories could be examined in the second block of the equation. As Table 10 in Appendix C demonstrates, the odds ratios for the remaining variables were similar despite the elimination of the special needs variable. In block 2, the variable representing the construct emotional and/or behavioral problems contained an odds ratio of 1.17, indicating that having an emotional and/or behavioral problem increased the expected number of placements by a factor of 1.17, holding all other variables in the equation constant. This means that having an emotional and/or behavioral problem increased the expected number of placements by 16.6% ($100[\text{Exp}(B)-1]$). Similarly,

⁵⁹. (1). $\text{Exp}[B] = 1.00$; $100[\text{Exp}(B)-1] = .015$
 (2). 365.25 (days in year) x .00014
 (unstandardized regression coefficient)
 = .0511
 (3). $e^{.0511} = 1.05$
 (4). $100[\text{Exp}(B)-1] = 5.2\%$

having an alcohol and/or substance abuse problem increased the expected number of placements by 29.4% ($\text{Exp}[B] = 1.29$). No odds ratios below 1 were reported, indicating that no special needs category helped reduce the expected number of placements.

In step 2 of equation 5, increased placement restrictiveness increased the expected number of placements by a factor of 1.31 ($\text{Exp}[B]$), indicating that children who experienced increased placement restrictiveness between the first and most recent placement at the time of the C-PORT interview faced an increased placement expectancy by 30.9%. Those remaining in the same placement restrictiveness could expect an 18.9% decrease in the expected number of placements, holding all other variables in the equation constant ($100[\text{Exp}(B)-1]$). Of course, caution should be exercised in interpreting these results because the missing data variable constructed as part of coding missing data indicated that the missing data may not be missing randomly.

Regarding initial placements in equation 6, being initially placed in a emergency shelter increased the expected number of placements by 46.2% ($100[\text{Exp}(B)-1]$), holding all other variables in the equation constant. On the other hand, placement in an "other group home" setting decreased the expected number of placements by 17.9%.

In terms of last known placement at the time of the C-PORT interview, placement in a therapeutic foster home

decreased the expected number of placements by 25.9% $(100[\text{Exp}(B)-1])$, holding all other variables in the equation constant. Placement in a residential treatment facility - level 1 decreased the expected number of placements by 23.6% $(100[\text{Exp}(B)-1])$, holding all other variables in the equation constant; and, placement in a general foster home decreased the expected number of placements by 26.7% $(100[\text{Exp}(B)-1])$, holding all other variables in the equation constant.

Part II: Typology of Disruptions

As has been previously discussed, CORS and C-PORT data sets both provide information about the number of placements the sample of children experienced, however, both provide slightly different mean placements, and this difference is statistically significant. In addition, according to the CORS placement information, the 639 sample children experienced a total of 2,257 placements, while C-PORT reported a total of 2,313 placements for 658 children. In the first analyses, CORS was chosen as the primary data base to extract placement information because this information was believed to be more accurate since CORS was designed to keep track of placement type and cost. Nevertheless, it was also noted that the CORS data set is not especially usable when looking at individual placements beyond the first and last placement because it was extremely difficult to obtain what is termed a "flat file" from CORS. Also, the C-PORT interview process yielded a wealth of information in some

instances about why children were placed. Therefore, to examine placement patterns in relationship to the proposed typology of disruptions, it was necessary to use C-PORT data.

Examining placements in terms of which appeared at first blush to occur as part of a permanency plan using C-PORT data, the following placements can be identified. Only 24 (3.6%) of the children sampled had once been or were residing in preadopt foster homes at the time of the C-PORT interview. Three of these children were in their second pre-adopt foster home, accounting for a total of 27 placements. Pre-adopt foster homes are usually distinguished from regular foster homes by virtue of the fact that there is a plan by the custodial agency to allow the children to be adopted by the foster parents, and there is a willingness on the part of the foster parents to adopt. This type of placement would be classified in quadrant 1 of the proposed typology.

At the time of the C-PORT interview, 97 children (15.4%) had resided in their biological homes at least once after their initial court adjudication. Twenty-one (3.3%) of the children had lived in their biological parents' homes more than once, amounting to 125 placements. Returning to care after a failed reunification attempt is usually referred to as foster care recidivism. The reader may recall that foster care recidivism is sometimes included in

estimates of re-placement rates even though it is not by the purest definition a re-placement. In the Part 1 analysis recidivism was included in the analysis because the CORS data set (which was believed to be more accurate) did not allow researchers to tease out recidivism from the analysis (not a flat file). Reunification with biological parents is most appropriately classified as a quadrant 2 placement because, although the worker may recommend reunification, the worker is not purely matching child needs with parental abilities. By law, biological parents have first rights to their own children unless a court determines that they are not fit to parent. Philosophically, reunification is the primary goal of public child welfare agencies, and it is often considered in the best interest of children to rehabilitate the home to even marginal standards in order to see that children who are bonded with their biological parent(s) are afforded the chance to be raised by them. This same standard would probably not be appropriate if applied by workers in assessing the suitability of traditional foster homes.

This same philosophy helps categorize placements with relatives or friends as quadrant 2 placements. While the worker has some responsibility to identify potential placements with relatives or family friends, the primary matching criterion is the bonding that children placed with family friends or relatives have with those potential

caregivers. In essence, these people select each other by virtue of blood relation or special bonding. At the time of the C-PORT interview, 122 children (18.5%) resided at least once in a relative or friend placement, with 23 children residing with a relative or friend more than once. This accounted for an additional 149 placements.

Other placements categorized as "successes" under the typology are those placements where it is likely a court mandated the placement based on a child's adjudication. For example, a court may determine that a child who has committed a serious crime should be placed in a detention facility because the seriousness of the crime mandates removal from society. Other placements may be made based on adjudication for special needs. For example, children may be placed in the custody of the Tennessee Department of Mental Health and remanded to a mental health facility due to serious mental health problems. Likewise, children may be placed in the custody of the Department of Education and remanded to an MR Developmental Center. The challenge in classifying these placements is in teasing out those placements where children are historically likely to be placed under court adjudication because C-PORT does not provide information about why children were placed in particular settings. Thus, the number of children placed in this category of quadrant 2 is based mainly on educated guessing. At the time of the C-PORT interview, 97 children

(15.4%) were placed in a juvenile detention center at least once, with 36 children being placed more than once, accounting for 167 additional placements. Four children (.7%) were placed in an MR Developmental center at least once, accounting for an additional five placements.

Unfortunately, the C-PORT data set did not provide information about the sequence of placements, as no placement dates were provided. Thus, it was not possible to estimate the proportion of placements that involved movement to less restrictive settings. C-PORT also did not provide information about those children residing in foster homes with the goal of long term foster care. These two types of placements are crucial quadrant 1 placements. The reader is reminded that is possible with the CORS data set to estimate the number of children moving to more and less restrictive placements between the initial placement and the placement at the time of the C-PORT interview.

All in all, it was possible to use the C-PORT data to identify 473 placements that, under the proposed typology, are considered placement successes (quadrant 1 and 2 placements). The reader is reminded that the only difference between quadrant 1 and 2 placements is the amount of control (more or less rather than absolute) workers have over the match. In short, of the 2,313 placements recorded in the C-PORT survey, 20.4% are clear placement successes under the typology. This number is most likely much higher,

as it was not possible with C-PORT to determined the proportion of placements classified as long term foster placements nor was it possible to determine the proportion of placements where children were placed in less restrictive settings. The reader is reminded that the CORS data indicated that 81 children (16.6%) moved to less restrictive settings during the time frame studied (between first placement and the last recorded placement at the time of the C-PORT interview). This number came from a data set with a significantly different mean value for number of placements, however.

Using the C-PORT placement information, a dichotomous variable was created indicating whether or not a child experienced one or more placement successes as categorized by the typology ("1" = placement success, "0" = placement failure). Results indicate that 281 children (42.7%) experienced at least 1 placement that could clearly be defined as part of viable permanency planning during their tenure in substitute care. In fact, 8.8% of the 658 children experienced more than one placement considered to be part of viable permanency planning.

Using the C-PORT data base and the proposed typology to classify placements as "placement failures", yielded the following information. At the time of the C-PORT interview, 13 children (2.0%) had lived in an independent living facility at least once during their tenure in substitute

care, amounting to 16 placements. Independent living facility placements would be classified in quadrant 3 of the typology because there is an assumption that workers placed children in these facilities after making a clinical decision that these children would be best served with preparation for independent living upon emancipation at age eighteen⁶⁰ Either past placement failures or a bleak outlook for placement matches cause workers and/or children to believe that a family will not be available to help launch them into adulthood and be available for assistance with support throughout adulthood.

At the time of the C-PORT interview, 66 children (10.5%) were placed on runaway status at least once after initial court adjudication because their whereabouts were unknown. Forty of these children had been classified as runaways more than once, amounting to 135 placements. Children who have run away have, in essence, chosen to live in placements not approved or supervised by the custodial agency and the court. Consequently, they are considered placement failures and are most appropriately classified under quadrant 4 of the proposed typology because workers have no control over the match.

Interestingly, two children had been classified as "homeless" during their tenure in substitute care, involving

⁶⁰. Many states allow children to remain in custody until age 21 or graduation from college if they are enrolled in post high school educational programs.

three placements. While it was not clear from the data what homeless meant exactly, there is a possibility that these children were living with biological parents at the time they became homeless. Although the typology did not originally address homelessness, it seems appropriate to classify homelessness as a placement failure since the state is in the business of finding at least some placement alternative for children adjudicated dependent in their system. After some consideration, it was decided that these three placements should be classified under quadrant 4 of the proposed typology, since workers have little direct matching control over reunifications with biological parents as discussed above.

At the time of the C-PORT interview, 185 children (29.4%) were placed at some time during their tenure in care in emergency shelters in Tennessee. Emergency shelters are the most temporary of living arrangements, with some states issuing policies that children not remain in them for more than a short, specified time (i.e. 30 days). They are often the placement of choice when there is no other bed available in a more suitable placement or when a placement has not been identified. Interestingly, 49 children spent time in emergency shelters more than once, and 253 placements were made in emergency shelters for the population of 658 children. While emergency shelters may be a necessary evil when faced with the task of finding appropriate living

arrangements for children who often come into care with just a few hours notice under emergency protective orders, they are clearly quadrant 4 placement failures because they probably would not be used if an appropriate living arrangement was available⁶¹. In discussing lack of bed space, it is important to also note that when C-PORT reviewers asked custodial department and ACCT workers whether the child in question had spent any time in placements that they initially considered to be temporary, many more placements were identified as temporary in nature. For example, when custodial department workers were asked, "Did the child have to be placed in a temporary setting prior to his/her initial placement?", they indicated that 300 of the children (48.7%) did (2.4% missing data). Custodial department workers indicated that 59 children were placed in one or more temporary placements, amounting to an additional 197 temporary placements.⁶² Clearly, other

⁶¹. While it is true that in some instances, children coming into care under emergency protective orders have had no previous contact with the child welfare system, it is often the case that protective services workers have some if not extensive information about children from efforts to prevent placement. With increasing compartmentalization of job responsibilities in child welfare services, placement workers may not have the information to make informed decisions about appropriate placement alternatives unless they have had the opportunity to collaborate with protective services (i.e. investigating) workers.

⁶². The question "How many" followed the filter item "Did the child have to be placed in a temporary setting prior to his/her initial placement?" Consequently, it has a large amount of missing data (78.0%).

placements besides emergency shelters are being used for temporary warehousing of children until a more appropriate match can be identified. Sadly, when asked, "How long did it take to acquire the initial placement [for this child]?", custodial department workers indicated that it took between one and six months to locate an appropriate placement for 104 of the sample children. Only half of the children (n = 335) were placed within five days (17.9% missing data).

Unfortunately, several quadrant 3 and 4 reasons for placement changes in the proposed typology could not be quantified due to limitations with the data. Placement moves associated with poor matches between child needs and placement resources and abilities were not able to be assessed nor were reasons associated with non-child related stressors in the foster home precipitating the removal of children or the closing of facilities or homes. And, as mentioned previously, the movement of children to more restrictive settings could not be assessed using the C-PORT data.

Counting the number of placements falling under quadrants 3 and 4 of the proposed typology was a bit more difficult because C-PORT did not allow one to know in what order placements occurred. So, although 497 placements were considered temporary while awaiting for an appropriate "initial" placement by workers, it is not clear how many of these initial placements were in emergency shelters. Erring

on the side of conservatism, only those placements in emergency shelters in addition to an initial shelter placement were counted. Counting temporary placements, emergency shelter placements beyond initial placement, independent living placements, runaways and homelessness, 710 (30.70%) of the reported 2,313 possible placements could be considered placement failures or true disruptions under the proposed typology. When a dichotomous variable was created indicating whether a children had experienced one or more placements that could be classified as true failures under the proposed typology ("1" = placement failure, "0" = no placement failure), frequency distributions indicate that 365 (55.5%) of sample children experienced at least one placement "failure" or disruption.

CHAPTER V

DISCUSSION

Data analysis: Part I

It is clear that as typically measured, foster care replacement data are by definition count data. As such, they do not meet the many assumptions necessary to successfully examine and interpret variables and models using OLS regression. Theoretically and conceptually, the Negative Binomial Regression Model fits foster care replacement data much better. Nevertheless, data were examined using the OLS model so that OLS findings could be compared to NBRM findings. Comparisons of significance tests indicate that the NBRM identified the same factors as related to disruption as OLS regression, but the NBRM identified additional correlates to disruption in the present data set that the OLS model did not detect. And, the NBRM provided estimates as to factor and percentage changes in the dependent variable given certain risk factors (odds ratio), information not available with OLS regression. This information helped quantify the strength of the relationship between certain variables and the risk that children would experience additional placements.

Nevertheless, the NBRM did not perfectly fit the model put forth in this study of foster care replacement. Replacement research is extremely complex, and study of this area is made more difficult when constructs are imprecise

and instruments are of unknown reliability. These factors most likely continued to play a role in the present study. After all, the study relied on secondary data that used worker judgement rather than precise protocols to identify the presence of variables such as special needs, reason for removal, etc. Regardless, the most significant problem with the present study is likely to be the high degree of overlap between variables (i.e. multicollinearity) and the high number of plausible interactions (i.e. moderating influences) among variables. For whatever reason, those noted or others, the model failed to run in two circumstances: testing for interactions and testing for curvilinear relationships, even after special treatment of the data (i.e. centering). Because there is good reason to not trust the OLS results regarding interactions and curvilinearity, the present study did little to enhance our understanding of the moderating influences of many key variables historically linked to placement instability and of whether or not a curvilinear relationship helps explain the negative regression coefficient associated with the length of time in care variable.

On the other hand, by using the NBRM with a large enough sample to provide adequate statistical power to examine a complex model, the present study was able to replicate the findings of some previous studies, confirm some hypotheses about the nature of variable relationships

and identify some variables which may be of interest in future research on foster care replacement (and quite possibly adoption disruption).

Child age continues to be strongly associated with increased chance of disruption, and the present study provides clear evidence that age should be considered a confounding variable to be held constant in any analysis of placement instability. While not directly tested in previous research, child age most likely interacts with other variables to affect research outcomes. Unfortunately, the NBRM was not able to assess interaction effects while holding other variables in the equation constant.

While length of time in care was not significantly related to number of placements with the OLS model, it was with the NBRM. Of interest in this dissertation is the fact that, contrary to previous research findings, the regression coefficient was negative; the longer children are in care, the less likely they are to disrupt. Given that most variables tested individually for interaction with length of time in care were statistically significant⁶³, it is likely that Pardeck (1984) was on track in testing for indirect relationships between length of time in care and

⁶³. While interaction effects could not be assessed while holding other variables constant with the NBRM, several individually assessed variables were found to interact with length of time in care: "other caregiver" reasons for removal, child behavior problems, dependency/neglect/abuse adjudications, DHS as custodial department, and DYD as custodial department.

replacement. The large number of partial interactions found with length of time in care points to the mind-boggling complexity this variable presents when attempting to understand placement instability. It also may have accounted for the negative regression coefficient which has confounded interpretation of results in the present study.

Examination of the characteristics of children in care the longest (two standard deviations above the mean), indicates that the negative regression coefficient may be at least partially explained because a subset of the sample skewed results. Clearly, children in care the longest (more than two standard deviations above the mean) were markedly different from the overall sample in many ways. These children were older than the overall sample, and they were more likely to have special needs, including emotional and/or behavioral problems, factors that have been found to be positively correlated with replacement. However, these children, on average, experienced fewer placements than the overall sample.

One likely explanation is that the children in care the longest appear to have taken a more traditional route through the child welfare system. They predominantly entered care because of abuse, neglect or other parent related problems. They were placed exclusively in DHS custody, and they predominately resided in foster homes both initially and at the time of the C-PORT interview. This

route is markedly different from those children who entered care because of child behavior problems, such as unruliness, status offenses and felony offenses.

The Adoption Assistance and Child Welfare Act of 1980 sought to affect the placement experiences of children much like those in care the longest. Specifically, the Act, brought about changes aimed at increasing family reunifications, terminating parental rights in a more timely manner, and increasing financial incentives for foster parents to adopt special needs children. Unfortunately, poor administrative record-keeping makes it impossible for researchers to compare children in care the longest before implementation of the Act with children in care the longest in the 1990's and to gauge whether the Act positively affected this subpopulation of children. While many studies have tracked the entry and discharge rates of children in substitute care in recent years, research does not provide us with a clue as to whether children in care the longest have been provided much relief in the past three decades. And, from a replacement standpoint, it is not clear whether these children need significant intervention. With fewer placements, it is quite possible that these children have found some stability within a home environment that is meeting their physical, emotional and developmental needs despite not affording them permanency. Of course, from a policy standpoint, these children are a problem because it

costs states money to maintain them in care.

Given that only one previous study examined the possible moderating influence of length of time and care and the lack of success with the present study in furthering our understanding of how length of time in care interacts to produce results, it seems that this variable is not well understood in terms of its impact on placement instability. Length of time in care is one construct that needs further examination, refinement and creative treatment when attempting to build a model of replacement. Previous research that has examined correlates to length of time in care may be a good place to start. Nevertheless, this research does provide additional confirmation that length of time in care is most likely the cause of spurious relationships in testing models of foster care replacement and should be partialled out hierarchically.

It was hypothesized that in Tennessee the department assigned custody of children should be held constant in the first block of the analysis because of the possibility that it would produce spurious correlations. This is because children enter different departments for different reasons. For example, children in DYD custody most likely enter care because of status offenses or delinquency. In fact, children in DYD custody were more likely to experience more placements. These results may also be a byproduct of the fact that children in DYD custody would tend to be older and

would tend to have behavior problems whereas this may not be the case with children entering DCS custody (i.e. neglect, abandonment), DMH custody (i.e. mental health reasons) or DOE custody (i.e. mental retardation). So, while it made good sense to hold department assigned custody constant in the present analysis, there may have been unnecessary duplication, as age and special needs were also held constant. In addition, other states may not differentiate between custodial departments as Tennessee does, therefore holding department assigned custody constant may not be beneficial with other data sets.

Finally, the present study held both court adjudication and primary reason for entry into care constant. It is possible that these two variables measured essentially the same or similar constructs. Given the problems with multicollinearity, there may be a way to streamline the model to take these factors into account without duplication of concepts when examining models of replacement in the future.

In the data analysis, the variable representing the general concept of special needs was held constant in the first block of the analysis because there seemed to be some evidence that special needs may have a confounding relationship on length of time in care if not held constant. The general special needs category was chosen because previous research did not clearly identify just what type of

behavior problems and special needs were most problematic. Constructs were poorly defined and measured, and there was some confusion as to whether special needs such as physical disability were related to disruption and in which direction the relationship existed (see Table 4 in Appendix A). As predicted, the general special needs variable was related to disruption with children having special needs being more likely to experience additional placements. In the second equation studied, "special needs" was not held constant in the first block of analysis, and each individual special needs category was examined separately. As predicted, children with emotional and/or behavioral problems were more likely to experience additional placements. Of special interest was the fact that children with alcohol and/or substance abuse problems were also likely to experience more placements. This variable is new to the study of foster care replacement and may hold some promise in understanding antecedents to disruption⁶⁴. In future analyses, it may be beneficial to hold constant only those children with special needs linked to replacement rather than lumping all special needs children together in one category. Finally, it also seems that one special need is enough to cause placement instability, as those with multiple special needs were not

⁶⁴. It is also interesting to note that 21.7% (n = 143) of the 658 children in care were found to have an alcohol and/or substance abuse problem, creating a large enough subsample to study this special need.

more or less likely to experience additional placements.

With respect to placement type, one is left to wonder whether the substitute care system in Tennessee is indeed working to help children find the least restrictive placements possible. Overall, many placements geared towards meeting the needs of less troublesome youth, such as residential treatment - level 1 and foster placements were associated with housing children who are less likely to disrupt. "Lock down" facilities, which tend to cater to more troublesome youth, seem to house children who are more likely to experience replacement.

On the other hand, there may be some evidence to point to systemic failures related to placing children with appropriate placement resources. Emergency shelters, which are associated with additional overall placements for the sample, exist primarily because of a lack of immediate bed space for children entering care or disrupting from placements. As a general rule, children in residential treatment facilities, regardless of level, are older than those found in foster homes. It may be that many children in residential treatment facilities would fare well in foster homes, but there are not enough foster homes in which to place these children. Although Part II of the present data analysis was more qualitative in nature, it did point to several possible ways in which systemic failures create unnecessary moves.

The NBRM's inability to exactly fit the model put forth in this analysis does not detract from the merit of using the statistical model when studying replacement. Instead, it points to the need to further refine the models being put forward for examination. Indeed, post hoc theorizing found areas where the model may have created situations where constructs may have overlapped or in a worst case scenario may have been duplicated. With some streamlining to the model put forth in this research, some variable relationships which account for little true variance in the dependent variable may be eliminated, thereby providing less chance that high multicollinearity would be an impediment to running a model of foster care replacement.

Furthermore, replacement is a complex and multi-faceted phenomenon involving many types of children from many life circumstances who are identified as a sample by virtue of the fact that they live in substitute care with an agency assuming a guardianship role. It is quite possible that models are obscured because these children are so different in so many ways (e.g. ages, behaviors, special needs) and no model can adequately capture the essence of what causes such a diverse population to disrupt. Earlier, it was proposed that future research may find some interventions that work for some types of kids and some types of disruptions while doing very little to affect other types of children and other types of disruptions. It is quite possible that

future research will need to focus in on subpopulations of children in care to be able to make sense of replacement. For example, since so many variables important to researchers are linked to child age (i.e. behavior problems, court adjudication), it is possible that stratification by age may produce important findings. It may also be useful to categorize moves by "type" as was attempted in Part II of the present analysis and identify correlates to different types of disruptions as a way to begin to develop interventions that may someday reduce some types of moves.

In short, the model tested here provides some replication of previous research findings. It offers some new variables to consider in future research. And, it identifies a new statistical technique with which to examine foster care replacement. On the other hand, the model also raises additional questions, especially with respect to interaction effects, multicollinearity, and variable curvilinearity, which are in need of further exploration on the way to understanding foster care replacement.

Data Analysis: Part II

The C-PORT data was not ideal for testing the proposed disruption typology. In fact, just over half of the placements could be accounted for using this data set. Nevertheless, some trends in placement patterns were apparent. First and foremost was the astonishing rate of initial placement in a temporary setting. Almost half of

the sample children experienced one or more extra replacements by the use of short-term or emergency placements while awaiting for a goal home to be located. On the other hand, almost half of the children experienced replacements that were, according to the typology, "successes" in that they could be linked to the carrying out of permanency planning efforts on the part of workers and court personnel. While future research may demonstrate that replacements are equally damaging to children regardless of intent, the point is that many of the disruptions experienced by children are initiated with the goal of improving children's well-being.

Given that the present study made use of a point-in-time sample, it may not be unusual that just over three percent of sample children were residing in homes with the goal of adoption, since, once adopted, children are removed from case lists. This may also be why few sample children had been reunified with biological parents. In fact, exactly as many children had resided in a juvenile detention center at some point during their tenure in foster care as those reunited with birthparents. The lesson is probably that while the C-PORT data could identify some placement trends (such as proportion of replacements considered successes or failures) when examined with a framework such as the proposed placement typology, caution should be exercised in interpreting any cross-sectional data when

oversampling of a specific subpopulation may skew results.

The C-PORT protocol also provided additional information about children's experiences in care which was not presented in the results section because it was not part of the typology tested. Nevertheless, the additional information identified themes which not only help to qualitatively describe children's placement experiences but may also point to areas for future research. For example, when asked, "If the child will not return home, where will he/she live?", only 20% of children were identified by ACCT workers as being likely to reside in the same place. "Other" substitute care placements (45.6%) and "independent homes" (19.8%) were the next most likely placement predictions (43.3% missing data). The remaining choices of "family home" and "relative/friend" home were infrequently indicated (2.7% and 10.7% respectively). When asked, "Is the child in an appropriate setting to meet his/her needs?", 89.3% of custodial department workers responded affirmatively (13.7% missing data). However, 16.3% and 13.2% of children were identified by custodial department workers and ACCT workers respectively as being at risk for disruption in their current placements (5.2% and 4.1% missing data respectively). This information characterizes the overall feeling in child welfare about the tentative nature of most placements. Although child welfare workers seemed to believe most placements were able to meet children's needs,

many did not believe that the placements would lead to permanency or that reunification was possible. With 80% of the children in homes where workers had little confidence that they would be insulated from replacement within the next year, one is left wondering whether the children had as little confidence in the stability of their placements as their workers and how this might affect their emotional well-being.

Finally when asked whether children in group homes or residential placements had projected time lines established for discharge to a family-like setting, custodial department workers identified 15.8% of children as not having a plan for discharge to a family-like setting (16.1% missing data) ACCT workers, who at the time of the interview were responsible for the majority of plan of care responsibilities, identified 18.8% of the children as not having a plan for discharge to a family-like setting. While it is certainly possible that workers had not established a time line for a multitude of reasons that were not child-related, it is also possible that these children were identified by workers as being unable to function appropriately in a family-like setting. In fact, there is some evidence to support this assertion. If those cases where either ACCT or custodial department workers indicated that a time line had not been established at the time of the C-PORT interview were selected out from the overall sample,

the mean number of placements increases to 4.79 (sd = 3.79) for this portion of the sample.

Similarly, if cases where children were returned to biological parents at least once were selected out from the overall sample, the mean number of placements jumps to 5.26 (sd = 3.3) for this portion of the sample. While including birthparent reunifications in the estimate of disruption certainly increases estimates of disruption rates when those reunifications do not work out, one is left to wonder whether placement instability partially drives attempts at reunification. In essence, workers and courts may determine that it is in the best interest of a child to be reunited with his/her biological parents when substitute placement arrangements do not seem to be meeting a child's needs and less likely to do so when children are in a stable alternative care arrangement. The answer, of course, would lie in future research.

Implications for Practice

One aspect of child welfare research that has persistently made it difficult for research to be implemented in real world settings is the fact that many variables associated with practice concerns, such as replacement, are unmanipulatable. No matter how good they are, social workers are not able to change child age, the type of abuse they experience prior to being identified as in need of protection, or their special needs. Many of the

variables used in this dissertation were unmanipulatable with little direct link to real world placement decisions.

On the other hand, the current research does provide evidence that may assist social workers in identifying profiles of children at risk for experiencing additional placements. Older children, those entering care for problematic child behaviors, those with special needs (especially emotional and/or behavioral problems and drug and/or alcohol abuse problems), and those in the custody of the Department of Youth Development (who tend to enter care because of problematic child behaviors and who tend to be older), had an increased likelihood of experiencing additional placements. Younger children, those entering care because of abuse or neglect, and those in the custody of the Department of Children's Services, tended to have fewer placements. Previous research, cited in the literature review, point to success with programs designed at providing more intensive monitoring of children in care. It may prove fruitful for children at high risk of replacement to be targeted for intensive case management services, thereby preventing unnecessary moves rather than targeting children who have already experienced a high number of replacements as previously cited interventions have done. In fact, it is entirely possible that, if one entire department in Tennessee were to implement an intensive intervention program like the two described in the

literature review, replacement rates could be reduced, as the children in the custody of the Department of Youth Development were at high risk for replacement. This, of course, assumes that child factors (i.e. age, behaviors) rather than agency factors (poor recruitment and training of foster homes, poor training of staff, attitudes about enacting punitive measures with children rather than rehabilitative measures) are driving the higher disruption rates.

In the literature review section, it was suggested that focusing on placement stability as a possible solution to our permanency planning dilemma requires a paradigm shift; perceiving the child welfare system as having some control over decisions that influence positive and negative placement outcomes. This research certainly identified areas where systemic problems and damaged children drive placement decisions, however, this research also identified areas where agencies and social workers can recognize high risk situations. But, in practice, there seems to be little interest in identifying risk factors for disruption and developing programs to intervene. While the average social worker may be able to clinically sense when children are at high risk for replacement, they may not have the technology or tools to intervene positively because there is little incentive to develop them. It is difficult for an individual worker to make a paradigm shift without agency

support to do so.

It is often said that public agency policies and procedures are reflective of societal attitudes toward agency objectives. For example, the general population tends to become rather upset knowing that a child is in physical danger or that a child has been physically harmed. Agencies tend to place more importance on identifying risk factors to child endangerment, especially physical endangerment. Triage systems are in place throughout the country, and training is provided to assist workers in making decisions that protect children from physical harm. Of course the technology is not perfect, and children are harmed. But the point is that there is an attempt by agencies to take control of investigations in a manner that assures the physical safety of children. No agency administrator in the United States would keep his job if he did not work proactively to assure that protective services workers were trained with the best methods available and that strict protocols were in place to investigate quickly and accurately.

It could be argued that just as emotional abuse and/or neglect receive short shrift in protective services work, so does placement instability because there is little or no interest in child emotional well-being once a child is placed in foster care. Furthermore, an argument could be made that the overall failure of child welfare agencies to

systematically collect information about system functioning as it relates to child physical, emotional, educational, and developmental well-being once placed in care reflects overall societal disinterest in the objectives of substitute care services.

Finally, since passage of the Adoption Assistance and Child Welfare Act of 1980, agencies have stepped up efforts to increase birthparent reunifications. However, little attention has been paid to whether increasing reunifications has helped or harmed children. From a replacement standpoint, it looks as though failed reunifications are causing additional unnecessary placements. Although it is unknown how failed reunifications affect child well-being in the research arena, clinical experience tells many social workers that failed reunifications can often be damaging to children, who may feel at fault when their parents fail at parenting once again. It is quite possible that the recent push for reunification (often at just about any cost) could be setting children up for placement failure because parents are given the opportunity to parent when they are not yet ready to do so.

It is likely that the child welfare system in the United States will enter the next millennium struggling with many of the same issues that they have faced for decades. In the nearly 20 years since the passage of the Adoption Assistance and Child Welfare Act of 1980, there has been a

dearth of innovative programs, interventions or policies seeking to address the needs of society's most vulnerable children. In fact, little attention has even been paid to how our nation's most seminal piece of child welfare legislation has performed with this population. With this in mind, there is little doubt why child welfare researchers and practitioners as a whole have not looked beyond the Adoption Assistance and Child Welfare Act of 1980 to address permanency planning issues to children. It is this researcher's belief that the study of placement instability will prove fruitful in furthering the ability of social workers to guide children to permanency. A picture is emerging as to the life circumstances and characteristics of children who are at higher risk of disruption. A handful of programs have been successful in reducing disruption rates, and these programs offered little more than extra attention to children with high rates of disruption. It is this researcher's contention that placement stability should be at the forefront of each child welfare worker's mind just as reunification is from the day that children enter care. And, this can only happen when agencies and workers decide that they will be proactive in their approach to placement instability rather than merely responding to impending disruptions. The present study found frequent confirmation that many placement decisions are being made to facilitate the goal of permanency. Just a little awareness and

creativity among key decision-makers (i.e. administrators, foster parents, caseworkers) can go a long way in developing innovative solutions aimed at reducing unnecessary moves and increasing placements connected with sound permanency planning. But, until key decision-makers view placement stability as a possible solution to child welfare permanency planning woes, it is unlikely that enough energy will be expended on this issue to bring about positive change in the lives and placement patterns of children in substitute care.

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APPENDICES

Appendix A

Table 1

Foster Care Replacement Research

Study	Sample Size	Sample Characteristics	Replacement Rate	Agency Type	Design	Primary Data Analysis Technique
Olsen, 1992	566	Ohio children entering care between 1/75 and 9/77; not expected to return home	$\bar{X}$ = 3 placements; mode = 2; range = up to 21 placements	Public	18 mo. Longitudinal	Path analysis
Stone & Stone, 1983	64	Foster children in SW state age 3.5+ years; no dates given; didn't include those disrupting < 60 days or > 18 mos.	48.5% disrupted	Public	Retrospective	OLS regression (multiple)
Pardeck, 1984	4,288	Used data from 1977 National Study of Social Services to Children and their families - 319 agencies in 38 states.	78% experienced 1 or 2 placements	Public	Cross-sectional	Chi Square
Staff & Fein, 1992	134	Siblings placed between 1976 and 9/90. Children had multiple placements before referral to agency.	Not reported	Private	Retrospective	Chi Square
Proch & Taber, 1987	87	Problematic Chicago foster children referred for specialized placement services	$\bar{X}$ = 9; median = 8 placements (prior to intervention)	Public	Retrospective	OLS Regression (Bivariate)

Table 1(cont.)

Foster Care Replacement Research

Study	Sample Size	Sample Characteristics	Replacement Rate	Agency Type	Design	Primary Data Analysis Technique
Fein, et al, 1983	187 (14 foster children)	Children under age 14, in care at least one month and moved to permanent placements	50% disrupted within 16 mos. of placement	Public	Two year longitudinal	OLS Regression (Multiple)
Taber & Proch, 1987	51	Chicago foster children aged 12-18 with at least two disruptions in past 24 mos., problematic behaviors and no viable case plan referred for specialized placement services; matched with children under age 14 and in care at least one month.	X and median = 9 placements	Public	Post-test quasi-experimental	OLS regression (Bivariate)
Fanshel & Shinn, 1978	624	New York City children aged birth to 12; in care 90+ days with no previous placements and not in state hospitals; selected by quota sampling.	72% = 1 or 2 placements; 1/5 leaving care in 4th or 5th year = 4+ placements	Public	5 year longitudinal	OLS regression (Multiple)
Lahti, 1982	492	Adoptable children receiving specialized placement services; matched with 233 children; placed with foster, adoptive and birth families	90% in same placements during 15 mo. tracking period.	Public	Post-test quasi-experimental	Differences between group means

Table 1(cont.)

Foster Care Replacement Research

Study	Sample Size	Sample Characteristics	Replacement Rate	Agency Type	Design	Primary Data Analysis Technique
Walsh & Walsh, 1990	51	Special Needs children in care at Casey Services in Montana	27% while in program	Private	Retrospective	OLS Regression (Multiple)
Palmer, 1979	200	Children remaining in long-term foster care until adulthood	Not assessed	Public	Retrospective	OLS Regression (Bivariate)
Staff & Fein (1995)	244	All children (Special Needs) served by Casey Services between Jan., 1987 & Nov., 1991.	<u>Closed cases</u> 51% placed once, 11% placed 5+ times <u>Open Cases</u> 49% placed once, 12% placed 5+ times	Private	Retrospective	Descriptive statistics only

Table 2

Adoption Disruption Research

Study	Sample Size	Sample Characteristics	Disruption Rate	Agency Type	Design	Primary Data Analysis Technique
Groze, 1986	91	Special needs children in large SW city agency	14.3%	Private	Not given	MLE (Logit) regression
Kagan & Reid, 1986	78	Special needs children placed between 1974 and 1982 by New York agency	53% disrupted at least once; 71% legally finalized during study period	Private	Retrospective	Chi square
Boer, et al., 1994	2,148	Parents of children adopted between 1/72 and 12/75 and born outside the Netherlands; 61% response rate	2.2% single placements; 3% sibling placements	Non-US	Retrospective	ANOVA
Barth & Berry, 1988	Phase I = 926, Phase II = 120	California adoptees age 3 and older placed between 1/80 and 6/84	10.2%	Public	Retrospective	Discriminant analysis
Zwimpher, 1983	160	New Zealand children aged 6 and younger	Not assessed.	Public, Non-US	Retrospective matched pairs design	Chi Square

Table 2 (cont.)

Adoption Disruption Research

Study	Sample Size	Sample Characteristics	Disruption Rate	Agency Type	Design	Primary Data Analysis Technique
Smith & Howard, 1991	148	Illinois children placed between 1/83 and 1/85 who disrupted; matched on age with intact placements	Not assessed	Public	Retrospective matched pairs	Chi Square; t-test
Westhaus & Cohen, 1990	58	Ontario families with special needs children placed with them between 1/84 and 9/85	12%	Private	One year longitudinal	t-test, Discriminant analysis
Kadushin & Seidl, 1971	2,945	Wisconsin children placed between 1/60 and 12/67	2.8%	Public	Retrospective	Chi Square
Rosenthal et al., 1988	54	Colorado children experiencing disruptions or dissolutions between 1981 and 1984; matched with intact placements	Not assessed	Public	Retrospective	MLE Regression (Logistic)
Berry & Barth, 1990	99	Subsample of adolescent children from larger study conducted on California children placed in adoption	24.2%	Public	Retrospective	Discriminant analysis

Table 2 (cont.)

Adoption Disruption Research

Study	Sample Size	Sample Characteristics	Disruption Rate	Agency Type	Design	Primary Data Analysis Technique
McDonald, et al, 1991	212	Children from six agencies in four NW states disrupting between 1/82 and 7/84; matched with intact placements	Not assessed	Public & Private	Retrospective	Multivariate statistics
Rosenthal & Groze, 1990	799 (60% response rate)	Intact placements of special needs children	Not assessed	Public & Private	Retrospective	Qualitative
Schmidt, et al., 1988	15 families (57.6% response rate)	Colorado parents whose placements had disrupted	Not assessed	Public	Retrospective	Qualitative
Valentine, et al, 1988	18 families (14.7% response rate)	Parents who experienced a disruption between 1982 and 1984 in South Carolina agency	Not assessed	Private	Retrospective	Qualitative
Festinger, 1986	897	Children listed on adoption exchange in NYC who were eventually placed in adoption	8.2% within 12 mos.	Public & Private	"Wrap around"	Descriptive statistics

Table 3

Factors Studied in Relation to Foster Care Replacement

Variable	1	2	3	4	5	6	7	8	9
Age	+#		+		+		+^^		
Social/emotional problems	+								
Presence of other children									
length of time married									
Sex									
No. of moves while in care						-			
Child behaviors/general		+	+						+
Sexual acting out									
History of sexual abuse									
Parenting experience									
length of time in care			+#		+	+			+
Number of workers			+^						
Reason for custody	+								+
Race/ethnicity	+@		+						
Parental ties	+@								+
Worker time/energy		+							
Sibling placement				-					
First placement in institution rather than foster care									+

1 = Olsen, 1982

2 = Stone & Stone, 1983

3 = Pardeck, 1984

4 = Staff & Fein, 1992

5 = Proch & Teber, 1987

6 = Fein, et al., 1983

7 = Taber & Proch, 1987

8 = Walsh & Walsh, 1982

9 = Fanshel & Shinn, 1978

+ significant

- not significant

* more likely to be stable

^ first three years in care

indirect effect

@ weak indirect effect

^^ not tested statistically

Table 4

Factors Studied in Relation to Adoption Disruption

Variable	1	2	3	4	5	6
Child is older	+			+		+
Adoptive parents older	++@					+
Presence of other children	-					+
Presence of other adopted children	+			+<		+
Married longer					+	
Sex of child		-		-		-
More moves while in care	-	+				+
Child behaviors/general				+#,+<		
Sexual acting out						
History of sexual abuse						
Parenting experience						
More workers handled case				+<		
Length of time in care	-			-		
Single parent adoption		-		-		
History of physical abuse		+				
Child physically aggressive		+				
More social support		+@				
Adoptive parent income/SES	+			++		-
Transracial placement	+					
Foster parent adoption				+@		
Physical disability				-		
Race/ethnicity of child				-		
Open/closed adoption				-		
Presence of subsidy				-<		
Placement supervised by agency with custody of child.						
Adoptive parent infertility						
Age of child at first placement in care		+				
Sibling placement	-		-	-		

1 = Groze, 1986

2 = Kagan & Reid, 1986

3 = Boer, et al., 1994

4 = Barth & Berry, 1988, Barth, et al., 1986

5 = Westheus & Cohen, 1990

6 = Kadushin & Seidl, 1971

+ significant

- not significant

* for mother only

^ younger ages

for 6-8 yr. olds only

@ more likely to be stable

< based on smaller sample

Table 4 (cont.)

Factors Studied in Relation to Adoption Disruption

Variable	7	8	9	10	11	12
Child is older	+		-	+		+
Adoptive parents older		+		+		
Presence of other children		+		-		
Presence of other adopted children					+	
Married longer				+		
Sex of child		+	-	-		-
More moves while in care					-	+
Child behaviors/general		+	-		+	+
Sexual acting out					+	
History of sexual abuse					+	
Parenting experience					++	
More workers handled case					-	
Length of time in care			-			
Single parent adoption			-			
History of physical abuse						
Child physically aggressive						
More social support						
Adoptive parent income/SES		-		+		-
Transracial placement						-
Foster parent adoption		+				
Physical disability		-				+
Race/ethnicity of child			+			-
Open/closed adoption						
Adoptive parent infertility				+		-
Placement supervised by agency with custody of child		+				
Age of child at first placement in care						
Presence of subsidy						
Sibling placement	+	+				

7 = Festinger, 1986

8 = Rosenthal, et al., 1988

9 = Berry & Barth, 1990

10 = Zwimpher, 1983

11 = Smith & Howard, 1991

12 = McDonald, et al., 1991

+ significant

- not significant

* for mother only

^ younger ages

@ more likely to be stable

Appendix B

Table 5

List of Constructs and Corresponding Variables

Construct of Research Interest	Source	Variable Name	Variable Label
Age	C-PORT	BRTMONTH	Birthmonth
		BRTDAY	Birthday
		BRTYEAR	Birthyear
Emotional/Behavioral Problems	C-PORT	SPNEEDS	Mental illness/emotional disturbance
		SPNEEDS	Behavioral disorder
		ACHIMHS (ACM)*	Does this child have any mental health problems that pose a risk to his/her safety?
		ACHSAS (ACM)*	Is this child suffering from emotional and/or behavioral difficulties?
		CDCHMHS (CDC)*	Does this child have any mental health problems that pose a risk to his/her safety?
		CDMEHES (CDC)*	Is this child suffering from emotional and/or behavioral difficulties?
	CORS	BEHDISAB	Behaviorally disabled
		AUTISTIC	Autistic
		EMOTDIST	Emotionally disturbed

*ACM = ACCT Case Manager Interview

*CDC = Custodial Department Caseworker Interview

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Physical Disability	C-PORT	SPNEED5	Physical disability
		SPNEED5	Sensory impairment
	CORS	VISIMP	Visually impaired
		HEARIMPA	Hearing impaired
		DEAFBLIND	Deaf and blind
		LANGIMP	Language impaired
		PHYSIMP	Physically impaired
		SPEECHIM	Speech impaired
Mental Retardation		TRAUMBRN	Traumatic brain injury
	C-PORT	SPNEED5	Mental retardation
	CORS	MR	Mentally retarded
Non-MR Developmental Disability/Delay	C-PORT	SPNEED5	Developmental disability
		SPNEED5	Learning disability
	CORS	DEVDELAY	Developmental delay
		NONMRDD	Non-MR Developmental Delay
		LEARNDIS	Learning disabled

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Chronic/Acute Health Condition	C-PORT	SPNEED4	Chronic Illness
		SPNEED7	HIV/AIDS
		SPNEED5	Substance exposed
	CORS	HEALTHIM	Health impaired
		AIDS	AIDS
Alcohol/Substance Abuse	C-PORT	SPNEED5	Alcohol Abuse
		SPNEED5	Substance abuse
		ASUBS5 (ACM)	Does this child have any substance abuse issues?
		CDCHSA5 (CDC)	Does this child have substance abuse issues that pose a risk to his/her safety?
Special Needs (General)	C-PORT	SPNEEDS1	Pregnant
		SPNEEDS2	Parent
		SPNEEDS3	Married
		SPNEEDS4	Chronic Illness
		SPNEEDS5	Disability

ACM = ACCT Case Manager Interview
 CDC = Custodial Department Caseworker Interview

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Special Needs (General)	C-PORT	SPNEEDS6	Substantial functional limitations
		SPNEEDS7	HIV/AIDS
		SPNEEDS8	Other special needs
		DIAGAX1	DSM diagnosis, Axis I
		DIAGAX2	DSM diagnosis, Axis II
		DIAGAX3	DSM diagnosis, Axis III
		DIAGAX4	DSM diagnosis, Axis IV
	CORS	DSMCAT	DSM category alphabetical listing
		DSME3	DSM category in ICD9 coding
		ORDERE	Unduplicated diagnosis
		COUNTH	Number of handicaps
		AIDS	AIDS
		AUTSTIC	Autistic
		BEHDISAB	Behaviorally disabled
		DEVDELAY	Developmental delay
		VISIMP	Visually impaired
		HEARIMPA	Hearing impaired
		DEAFBLIND	Deaf and blind

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Special Needs (General)	CORS	DEVDELAY	Developmental delay
		NONMRDD	Non-MR developmental delay
		MR	Mentally retarded
		EMOTDIST	Emotional disturbance
		FUNCDELA	Functionally delayed
		HEALTHIM	Health impaired
		LEARNDIS	Learning disabled
		LANGIMP	Language impaired
		PHYSIMP	Physically impaired
		SPEECHIM	Speech impaired
		TRAUMBRN	Traumatic brain injury
		MULTIHAN	Multi-handicapped
		OTHRHAND	Other handicap
		COUNTH	Number of handicaps
Multiple Special Needs	CORS		

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Reason for Entry into Care	C-PORT	REASRE15	Primary reason for entry into care
		REASRE25	Secondary reason for entry into care
Court Adjudication	C-PORT	ADIDELY*	Adjudicated delinquent (year)
		ADIABUSY*	Adjudicated abused (year)
		ADIUNRUY*	Adjudicated unruly (year)
		ADIDPNGY*	Adjudicated neglected (year)
		MHCOMMTY*	Mental health commitment (year)
Department Assigned Custody	CORS	ADJUDIC	Adjudication type
		RESPDEPT	Responsible department
		CURPLCTS	Current placement type. Value: (3) foster parent adoptive home, (4) foster home, (5) relative/friend placement, (6) youth development center, (7) MR development center, (8) Diagnostic shelter, (9) emergency/shelter facility, (10) group home, (11) staff secure group home, (12) hardware secure group home, (13) therapeutic foster home, (14) residential facility - level 1, (15) residential facility - level 2, (16) residential facility - level 3, (17) private psychiatric hospital, (18) state psychiatric hospital, (19) detention, (20) drug/alcohol facility, (21) halfway house, (22) independent living facility, (23) wilderness program, (26) Out of state foster home, (27) Out of state residential, (28) other

*Only year necessary to establish whether an adjudication occurred under specified type

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Length of Time in Care	C-PORT	REMOVALM	Removal month
		REMOVALD	Removal day
		REMOVALY	Removal year
	CORS	CUSTDAY	Custody day
		CUSTMNTNTH	Custody month
		CUSTYR	Custody year
		CUSTTIME	Days in custody
Parental Visitation	C-PORT	CGVISMOS (CG)	How often does the child visit (face to face) with his/her mother?
		CGVISFA5 (CG)	With his/her father?
		AVISMOS (ACM)	How often does this child visit with his/her mother?
		AVISFA5 (ACM)	With his/her father?
		CDVISMOS (CDC)	How often does this child visit with his/her mother?
		CDVISFA5 (CDC)	With his/her father?

CG = Interview with Caregiver

ACM = Interview with ACCT Case Manager

CDC = Interview with Custodial Department Caseworker

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Placement type (cont.)	CORS	PLACREST	No value label: (1) missing, (2) alc/drug 30 day, (3) cont contract, (4) Contract foster, (5) DYD group home, (6) diag shelter, (7) emerg shelter, (8) ind living, (9) judic detain, (10) med/surgical hospital, (11) misc., (12) private psych hospital, (13) RTC L 1, (14) RTC L 2, (15) RTC L 3, (16) RTC L 4, (17) Runaway, (18) Spec res sch, (19) State psy hosp, (20) TCMHMR dev ctr, (21) DYD dev ctr, (22) Therap foster, (23) Wilderness, (24) Birth/adop fam, (25) Foster home, (26) Ind Liv, (27) Non rel home, (28) Other, (29) Pre-adopt, (30) Relative home
Typology: Quadrant I	C-PORT	TYPGCC1	Adoptive parent home
		TYPGCC8	Foster parent adoptive home
	CREATED		Less restrictive setting
Typology: Quadrant II	C-PORT	TYPGCC18	Relative/friend placement
		TYPGCC2	Biological parent's home
	CORS	ADJUDIC	Adjudication type
Typology: Quadrant III	CORS	DISCREAS	Discharge reason. Value: (15) & (29) Lack of progress, (24) Higher (more intensive) level of care needed, (25) Institution/agency cannot meet needs of child
	CREATED		More restrictive setting
Typology: Quadrant IV	CORS	DISCREAS	Discharge reason. Value: (26) Institution/agency contract ended, (28) Lack of funds
		TYPEPLAC	No label. Value: (3) Emergency time-limited placement

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Placement type (cont)	C-PORT	TYPPOC1	Adoptive parent's home
		TYPPOC2	Biological parents home
		TYPPOC3	Detention
		TYPPOC4	Diagnostic shelter
		TYPPOC5	Drug/alcohol facility
		TYPPOC6	Emergency/shelter facility
		TYPPOC7	Foster home
		TYPPOC8	Foster parent adoptive home
		TYPPOC9	Group home
		TYPPOC10	Halfway house
		TYPPOC11	Hardware secure group home
		TYPPOC12	Homeless
		TYPPOC13	Independent living facility
		TYPPOC14	MR development center
		TYPPOC15	Out-of-state foster home
		TYPPOC16	Out of state residential
		TYPPOC17	Private psychiatric hospital

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Placement type (cont)	C-PORT	TYPPCC18	Relative/friend placement
		TYPPCC19	Residential facility - level 1
		TYPPCC20	Residential facility - level 2
		TYPPCC21	Residential facility - Level 3
		TYPPCC22	Runaway
		TYPPCC23	Staff secure group home
		TYPPCC24	State psychiatric hospital
		TYPPCC25	Therapeutic foster home
		TYPPCC26	Youth development center
		TYPPCC27	Wilderness program
		TYPPCC28	Other
	CORS	LIVARGMT	Living arrangement: (2) birth/adoptive home, (3) foster home, (4) Independent living, (5) Non-relative home, (6) Other, (7) Pre-adoptive home, (8) Relative home

Table 5 (cont.)

Construct of Research Interest	Source	Variable Name	Variable Label
Typology: Quadrant IV (cont.)	C-PORT	ATEMP5	Did the child have to be placed in a temporary setting prior to his/her placement?
		APMANY5	If yes, how many?
		CDTEMP5	Did the child have to be placed in a temporary setting prior to his/her initial placement?
		CDPMANY5	If yes, how many?

Level 1	Foster home Pre-adopt foster home Non-relative home Contract foster home Relative home Therapeutic foster home
Level 2	Department of Youth Development group home Diagnostic shelter Emergency shelter Residential treatment - Level 1 Residential treatment - Level 2 Special resources school TN Department of Mental Health/Mental Retardation Development Center
Level 3	Alcohol/drug 30 day treatment Judicial detention Private psychiatric hospital Residential treatment - Level 3 Residential treatment - Level 4 Department of Youth Development Center State psychiatric hospital

Figure 1. Categorizing Placement Restrictiveness

	Clinical (Worker decision-making prominent)		Non-Clinical (Worker had little control over match)	
	Part of Permanency Plan (Placement success)		Not Part of Permanency Plan (Placement failure)	
	I		II	
	* Adoptive placement * Worker decides reunification best * Long-term foster care arrangement located * More appropriate placement is located * Move to less restrictive setting		* Court decides reunification best * Relative/friend placement * Court mandates placement setting based on adjudication (i.e. home for youth offenders)	
	III		IV	
	* Foster family unable or unwilling to parent child * Child behavior problems * Poor match between child needs and substitute placement's resources and/or abilities * Move to more restrictive setting		* Death or illness in foster family * Facility or home closes * Not enough beds in first placement of choice (i.e. temporary placement)	

FIGURE 2. TYPOLOGY OF DISRUPTIONS

Appendix C

Equation 1	Step 1 ¹	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody Special needs
	Step 2 ¹	Age x Length of time in care Age x Primary reason for entry into care Age x Court adjudication Primary reason for entry into care x Length of time in care Court adjudication x Length of time in care Department with custody x Length of time in care Special needs x Department with custody Special needs x length of time in care
Equation 2	Step 1	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody
	Step 2 ³	Emotional/behavioral problems Physical disability Mental retardation Non-MR developmental disability/delay Chronic/acute health condition Alcohol/substance abuse
Equation 3	Step 1	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody
	Step 2 ⁴	Number of handicaps Multi-handicapped
Equation 4	Step 1	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody Special needs
	Step 2 ⁵	Parental visitation

Figure 3. Variables and Order of Entry for Negative Binomial Regression Model.

Equation 5	Step 1	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody Special needs
	Step 2 ⁶	Restrictiveness of setting (created)
Equation 6	Step 1	Age Length of time in care Primary reason for entry into care Court adjudication Department with custody Special needs
	Step 2 ⁷	Initial placement type (created) Final placement type (created)

Figure 3 (continued). Variables and Order of Entry for Negative Binomial Regression Model.

1. Hierarchical partitioning of variables to remove spurious or confounding relationships between predictor variables and dependent variable of interest.
2. Testing for interaction effects.
3. Examining relationship between special needs categories and number of placements.
4. Examining the relationship between the presence of multiple special needs and number of placements.
5. Examining the relationship between frequency of parental visitation and number of placements.
6. Examining the relationship between increases in placement restrictiveness of decreases in placement restrictiveness and number of placements.
7. Examining relationships between placement types (i.e. foster home, emergency shelter, residential treatment facility) and number of placements.

Table 6

Categorical Variables used in NBRM Equations

Variables	N	%	% Missing	Type
Reason for entry into care	658		9.1	Control
Child behavior problem	194	36.3		
Neglect by caretaker	172	28.8		
Other caretaker reason	81	13.5		
Physical abuse	48	8.0		
Sexual abuse	42	7.0		
Other child reason	38	6.4		
Department assigned custody	658		2.4	Control
Dept. of Children's Services (DCS)	527	82.1		
Dept. of Youth Development (DYD)	97	15.1		
Dept. of Mental Health (DMH)/Dept. of Education (DOE)	18	2.8		
Court adjudication	658		4.5	Control
Dependency neglect/abuse	370	58.8		
Unruliness	94	14.9		
Delinquency/felony	56	8.9		
Delinquency/misdemeanor	53	8.4		
Assessment	28	4.5		
Other	29	4.7		
Special needs (general)*	658		0	Control
Yes	505	76.7		
No	153	23.3		
Emotional and/or behavioral problems*	658		0	Control
Yes	450	68.4		
No	208	31.6		
Physical disability*	658		0	Control
Yes	39	5.9		
No	619	94.1		

* Created variable Disability was indicated if an affirmative response was given on C-PORT and CORS variables listed in Appendix C. "No" was coded as "0"; "yes" was coded as "1".

Table 6 (continued)

Variables	N	%	% Missing	Type
Mental Retardation*	658		0	Control
Yes	46	7.0		
No	612	93.0		
Non-MR developmental disability/ delay*	658		0	Control
Yes	104	15.8		
No	554	84.2		
Chronic/acute health condition*	658		0	Control
Yes	62	9.4		
No	596	90.6		
Alcohol/Substance abuse*	658		0	Control
Yes	143	21.7		
No	515	78.3		
Multi-handicapped*	658		0	Independent
Yes	247	37.5		
No	411	62.5		
Number of disabilities*	658		0	Independent
0	161	24.5		
1	250	38.0		
2	166	25.2		
3	64	9.7		
4	15	2.3		
5	2	.3		
Visitation (Mother)	658		42.2	Independent
Not at all	143	37.6		
Up to once a week	89	23.4		
Every other week	65	17.1		
Monthly	44	11.6		
Every other month	11	2.9		
1-5 times/year	39	10.3		

* Variable was created. Disability was indicated if an affirmative response was given on C-PORT and CORS variables listed in Appendix C. "No" was coded as "0"; "yes" was coded as "1".

Table 6 (continued)

Variables	N	%	% Missing	Type
Visitation (father)	658		51.5	Independent
Not at all	226	70.5		
Up to once/week	41	12.9		
Every other month	21	6.6		
1-12 times/year	31	9.7		
Placement restrictiveness**	658		25.8	Independent
Stayed the same	347	71.1		
Decreased	81	16.6		
Increased	60	12.3		
Initial placement	658		.9	Independent
Foster home	236	41.3		
Emergency shelter	83	12.7		
Diagnostic shelter	48	7.5		
Intensive residential/ psychiatric	48	7.5		
Other group setting	48	7.5		
Relative home	45	7.0		
Lock down facility	36	5.6		
Birth/adoptive family	28	4.4		
Current placement	658		4.6	Independent
Foster home	210	33.0		
Birth/adoptive home	80	12.6		
Relative home	51	8.0		
Therapeutic foster home	47	7.4		
Residential treatment - L1	42	6.6		
Other group setting	39	6.1		
Residential treatment - L2	37	5.8		
Other misc. placement	36	5.7		
Intensive residential/ psychiatric	35	5.5		
Runaway	33	5.2		
Lock down facility	27	4.2		

** Created variable. Initial and current placements were coded in one of three categories outlined in Figure 1. The change in restrictiveness was then measured. Did not include placements in birth/adoptive homes or medical/surgical hospitals. Also not included were placements coded in a "miscellaneous placement" category and those coded as being on runaway status.

Table 7

Quantitative Variables Used in NBRM Equations

Variables	Mean	SD	Median	Range	N	% Missing	Type
Child age*	12.4	5.5	14.8	15 days to 21.4 years	658	3.0	Control
Length of time in care*	2.2	2.4	1.4	14 days to 13.4 years	658	6.8	Control
Number of placements	3.5	3.1	2.0	1 to 22	658	2.9	Dependent

*Presented in years.

Table 8

C-PORT Interviews

Interview Source	N	%	% Missing
ACCT	658		2.7
Yes	628	98.1	
No	12	1.9	
Caregiver	658		2.7
Yes	423	66.1	
No	217	33.9	
Custody Department Worker (DCS)	658		2.7
Yes	626	97.8	
No	14	2.2	
Court Representative	658		2.9
Yes	417	65.3	
No	222	33.7	
Parent	658		2.7
Yes	291	45.5	
No	349	54.5	
Teacher	658		2.9
Yes	159	24.9	
No	480	72.9	
Provider	658		2.9
Yes	237	37.1	
No	402	62.9	
Youth	658		2.7
Yes	429	67.0	
No	18	33.0	

Table 9

OLS Regression Results

Equation 1					
Independent Variables	<u>r</u>	<u>B</u>	<u>Beta</u>	<u>t</u>	<u>P (two-tailed)</u>
Step 1					
Child age	.39	4.11E-04 ¹	.26	5.54	.00
Length of time in care	-.11	-2.78E-04	-.08	-1.94	.05
Reason for entry into care					
Physical abuse	n/a	-.11	n/a	-.31	.76
Sexual abuse	n/a	-.33	n/a	-.84	.40
Neglect	n/a	.21	n/a	.89	.37
Other caregiver problem	n/a	.73	n/a	2.43	.01
Child behavior problem	n/a	-.50	n/a	-1.56	.12
Other child problem	n/a	.01	n/a	.01	.98
Court adjudication					
Assessment	n/a	-.42	n/a	-.87	.39
Delinquency/felony	n/a	-.76	n/a	-1.91	.06
Delinquency/misdemeanor	n/a	.63	n/a	1.65	.10
Dependency/neglect/abuse	n/a	-.90	n/a	-2.88	.00
Unruly	n/a	.39	n/a	1.21	.23
Other	n/a	1.07	n/a	2.24	.03
Department assigned custody					
Dept. of Childrens Services	n/a	-.41	n/a	-1.32	.18
Dept. of Youth Development	n/a	1.51	n/a	4.39	.00
Dept. of Mental Health/Dept. of	n/a	1.10	n/a	-2.30	.02
Education	.24	.75	.10	2.65	.00
Special Needs					
Missing data variables	.01	.20	.01	-1.94	.71
Length of time in care	-.04	-.41	-.04	.37	.31
Reason for removal					
Step 1 Change					
R^2 change = .25, F change(17,621) = 11.92, $p < .001$					

Step 2					
Age x length of time in care	-.01	-6.09E-08	-.09	-.91	.47
Age x physical abuse	-.08	-2.82E-04	-.16	-1.29	.19
Age x sexual abuse	-.06	1.94E-05	.01	.11	.93
Age x neglect	.05	1.46E-04	.11	1.11	.27
Age x other caregiver problems	.02	3.85E-04	.24	2.39	.02
Age x child behavior problems	.24	-1.33E-05	-.01	-.07	.96
Age x assessment	-.05	1.48E-04	.08	.49	.61
Age x delinquency/felony	.04	-9.78E-05	-.06	-.23	.81
Age x delinquency/misdemeanor	.11	3.95E-04	.26	.69	.49
Age x dependency/neglect/abuse	-.18	-1.91E-04	-.17	-1.11	.29
Age x unruly	.07	9.60E-05	.07	.29	.80
Age x Dept. of Childrens Services	.01	1.26E-04	.11	.42	.73
Age x Dept. of Youth Development	.28	2.74E-05	.02	.04	.96
LOT* x physical abuse	-.10	-1.94E-04	-.03	-.43	.60
LOT x sexual abuse	-.07	-2.44E-04	-.04	-.69	.51
LOT x neglect	-.13	-3.86E-04	-.08	-1.20	.18
LOT x other caregiver problems	-.06	-6.73E-04	-.13	-2.21	.03
LOT x child behavior problems	.17	.00	.20	2.43	.01
LOT x assessment	-.06	.00	.07	.52	.59
LOT x delinquency/felony	.03	6.83E-04	.05	.41	.64
LOT x delinquency/misdemeanor	.08	-3.39E-06	-2.71E-04	.02	.10
LOT x Dependency/neglect/abuse	-.25	-6.55E-04	-.20	-1.07	.24
LOT x Unruly	.07	5.08E-05	.01	.08	.94
LOT x Dept. of Childrens Services	-.19	-9.53E-04	-.28	-1.40	.18
LOT x Dept. of Youth Development	.27	.00	.18	2.51	.02
SpN** x physical abuse	-.08	.10	.01	-.01	.90
SpN x sexual abuse	-.09	-2.21	-.23	-2.20	.04
SpN x neglect	.06	-.06	-.01	-.26	.91
SpN x other caregiver problems	-.01	-.32	-.04	-.56	.66
SpN x child behavior problems	.24	1.24	.21	1.79	.13
SpN x Dept. of Childrens Services	-.02	.16	.02	.10	.90
SpN x Dept. of Youth Development	.28	.44	.05	.55	.62
SpN x LOT	-.02	3.00E-04	.08	.85	.39
Step 2 change					
R^2 change = .08, F change(36,603) = 2.10, $p = <.01$					
Overall change					
$R = .57$, $R^2 = .33$, adjusted $R^2 = .27$, $F(50,588) = 5.68$, $p <.001$					

*Refers to Length of time in care

*Refers to Special needs

¹ Signifies to the negative power. For example, 4.11E-04 = .000411.

Table 9 (continued)

Equation 2					
Independent Variables	r	B	Beta	t	p (two-tailed)
Step 1					
Child age	.39	4.75E-04	.30	6.75	.00
Length of time in care	-.12	-2.81E-04	-.08	-1.95	.05
Reason for entry into care					
Physical abuse	n/a	-.17	n/a	-.45	.65
Sexual abuse	n/a	-.26	n/a	-.66	.51
Neglect	n/a	.19	n/a	.79	.43
Other caregiver problem	n/a	.74	n/a	2.47	.01
Child behavior problem	n/a	-.49	n/a	-1.51	.13
Other child problem	n/a	-.01	n/a	-.02	.98
Court adjudication					
Assessment	n/a	-.39	n/a	-.81	.42
Delinquency/felony	n/a	-.77	n/a	-1.93	.05
Delinquency/misdemeanor	n/a	.68	n/a	1.70	.09
Dependency/neglect/abuse	n/a	-.89	n/a	-2.86	.00
Unruly	n/a	.41	n/a	1.30	.19
Other	n/a	.10	n/a	2.08	.04
Department assigned custody					
Dept. of Childrens Services	n/a	-.38	n/a	-1.21	.23
Dept. of Youth Development	n/a	1.51	n/a	4.36	.00
Dept. of Mental Health/Dept. of	n/a	-1.13	n/a	-1.21	.02
Education					
Missing data variables	.01	.22	.02	.41	.68
Length of time in care	-.04	-.41	-.04	-.10	.32
Reason for removal					
Step 1 change					
R^2 change = .24, F change(16,622) = 12.10, $p < .001$					
Step 2					
Non-MR developmental delay	-.04	-.35	-.04	-1.13	.26
Chronic/acute health condition	.12	-.25	-.02	-.61	.54
Physical disability	-.06	.04	.00	.09	.93
Mental retardation	-.03	-.28	-.02	-.61	.54
Emotional and/or behavioral problem	.28	.41	.06	1.55	.12
Alcohol/substance abuse	.34	1.19	.16	3.71	.00
Step 2 change					
R^2 change = .03, F change(6,632) = 3.49, $p < .01$					
Overall change					
$R = .51$, $R^2 = .26$, adjusted $R^2 = .23$, $F(22,616) = 9.97$, $p < .001$					

Table 9 (continued)

Equation 3					
Independent Variables	<u>r</u>	<u>B</u>	Beta	<u>t</u>	<u>p</u> (two-tailed)
Step 1					
Same as equation 2					
Step 1 change					
Same as equation 2					
Step 2					
Presence of multiple special needs	.23	.31	.05	.71	.47
Number of special needs (count)	.24	.07	.02	.35	.72
Step 2 change					
<u>R</u> ² change = .00, <u>F</u> change(2,636) = 1.63, <u>p</u> = .20					
Overall change					
<u>R</u> = .49, <u>R</u> ² = .24, adjusted <u>R</u> ² = .22, <u>F</u> (18,620) = 10.96, <u>p</u> < .001					

Table 9 (continued)

Equation 5					
Independent Variables	<u>r</u>	<u>B</u>	Beta	<u>t</u>	<u>p</u> (two-tailed)
Step 1					
Same as equation 1					
Step 1 change					
Same as equation 1					
Step 2					
Restrictiveness of care					
Increase	n/a	1.18	n/a	4.57	.00
Decrease	n/a	-.38	n/a	-1.59	.11
Same	n/a	-.69	n/a	-3.83	.00
Missing data variable					
Restrictiveness of care change	.19	1.08	.15	4.15	.00
Step 2 change					
<u>R</u> ² change = .05, <u>F</u> change(3,635) = 13.97, <u>p</u> = .00					
Overall change					
<u>R</u> = .54, <u>R</u> ² = .29, adjusted <u>R</u> ² = .27, <u>F</u> (20,618) = 12.86, <u>p</u> < .001					

Table 9 (continued)

Equation 6					
Independent Variables	<u>r</u>	<u>B</u>	Beta	<u>t</u>	<u>p</u> (two-tailed)
Step 1					
Same as equation 1					
Step 1 change					
Same as equation 1					
Step 2					
First placement					
Diagnostic shelter	n/a	.45	n/a	1.20	.23
Emergency shelter	n/a	1.68	n/a	5.64	.00
Birth/adoptive family	n/a	-.09	n/a	-.20	.84
Foster home (general and therapeutic)	n/a	.09	n/a	.35	.73
Relative home	n/a	-.58	n/a	-1.36	.18
Other misc. placement	n/a	-.04	n/a	-.10	.91
Intensive residential/psychiatric	n/a	.08	n/a	.22	.83
Other group home setting	n/a	-.74	n/a	-1.87	.06
"Lock down" facility	n/a	-.85	n/a	-1.68	.09
Most recent placement					
Residential treatment - Level I	n/a	-1.12	n/a	-2.71	.01
Residential treatment - Level II	n/a	-.10	n/a	-.25	.80
Runaway	n/a	.89	n/a	2.01	.04
Therapeutic foster home	n/a	-1.28	n/a	-3.23	.00
Birth/adoptive family	n/a	.36	n/a	1.18	.24
Foster home (general)	n/a	-1.42	n/a	-4.39	.00
Relative home	n/a	-.42	n/a	-.99	.32
Other misc. placement	n/a	-.63	n/a	-1.47	.14
Intensive residential/psychiatric	n/a	.66	n/a	1.53	.13
Other group home setting	n/a	.29	n/a	.69	.49
"Lock down" facility	n/a	2.54	n/a	4.58	.00
Step 2 change					
<u>R</u> ² change = .10, <u>F</u> change(21,617) = 4.97, <u>p</u> = .00					
Overall change					
<u>R</u> = .59, <u>R</u> ² = .34, adjusted <u>R</u> ² = .31, <u>F</u> (35,603) = 9.01, <u>p</u> < .001					

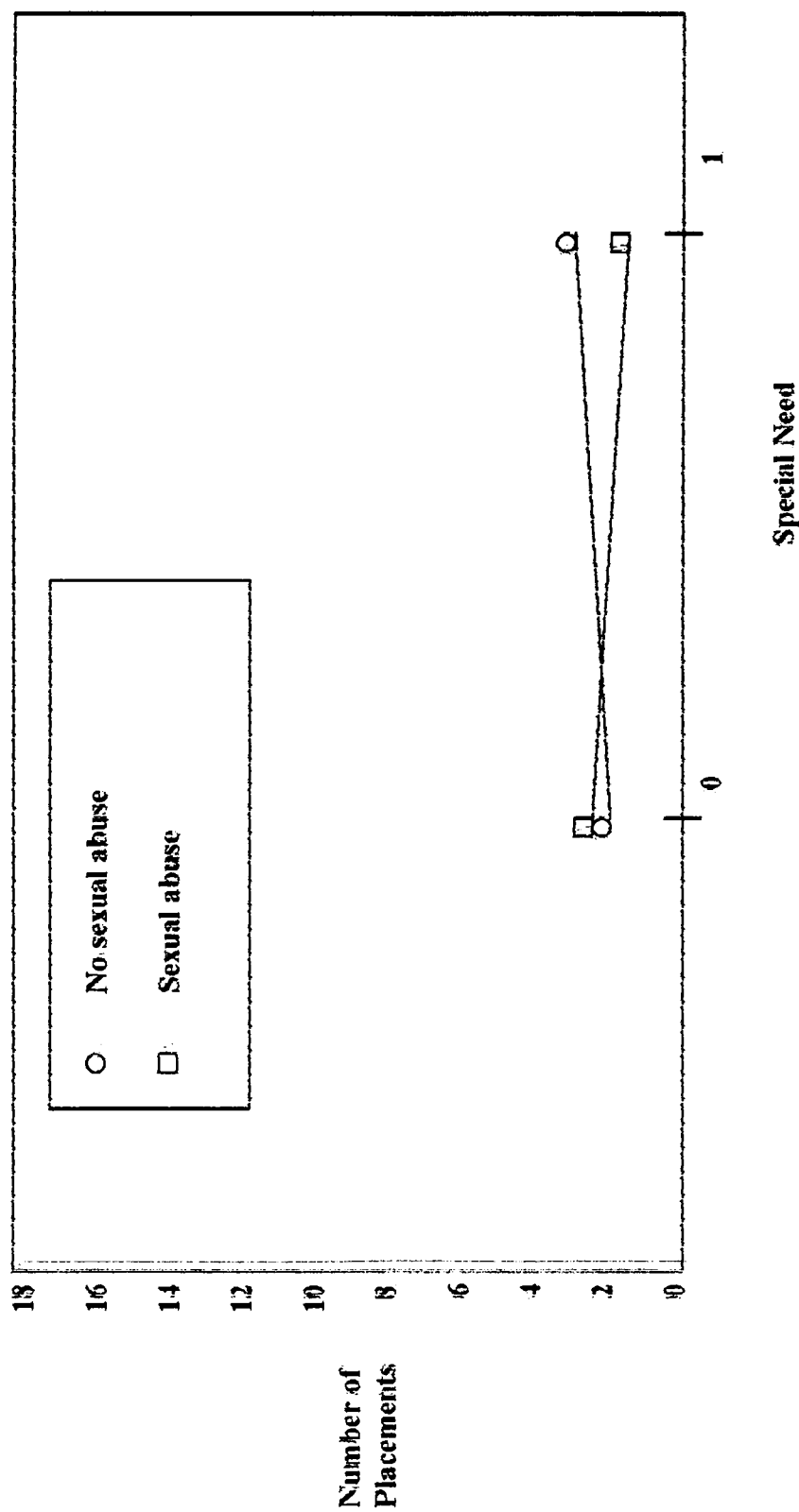


Figure 4. The effect of the presence of child special needs on the number of placements as moderated by sexual abuse as reason for entry into care.

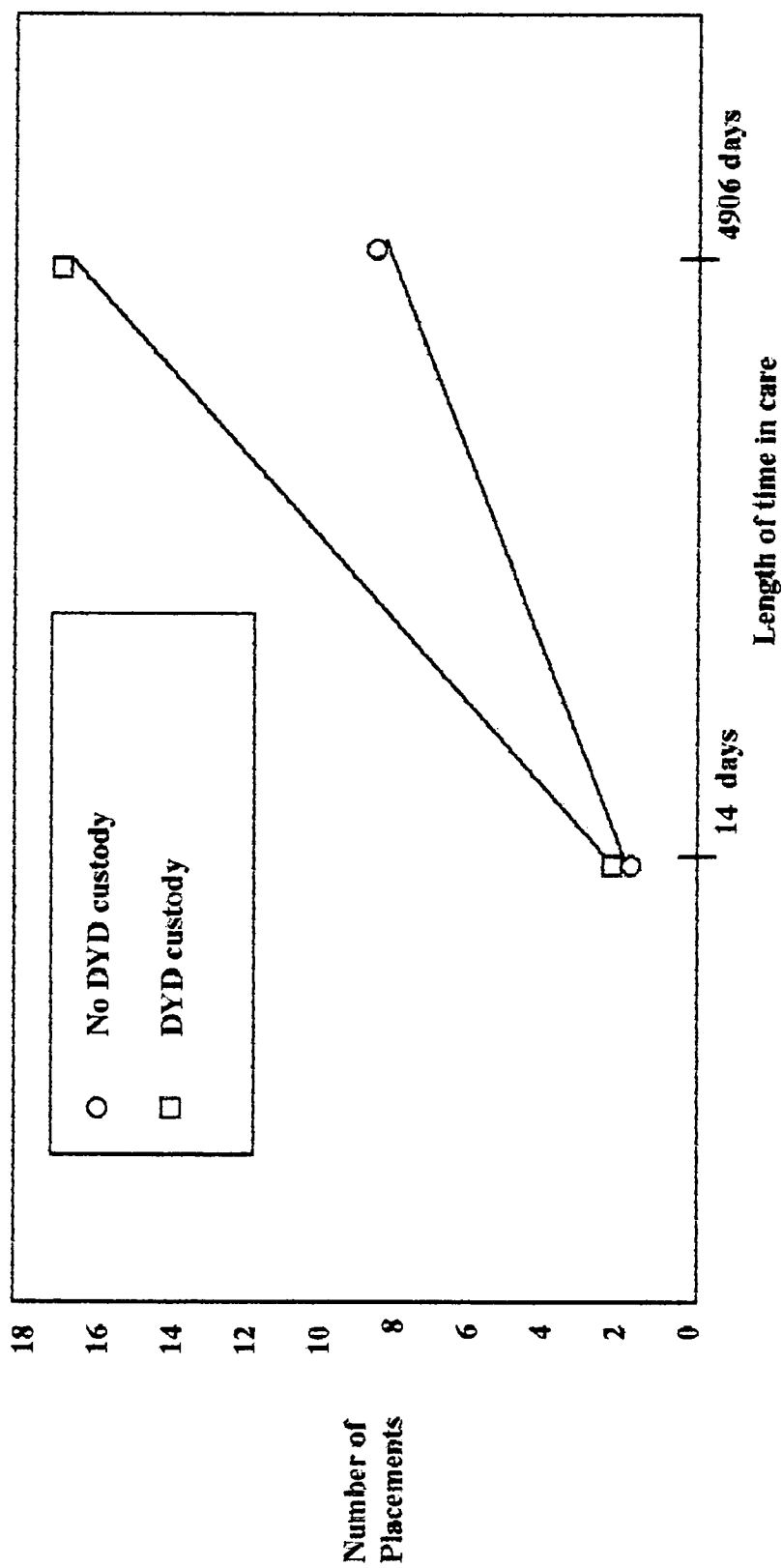


Figure 5. The effect of the presence of length of time in care on the number of placements as moderated by custody with the Department of Youth Development (DYD).

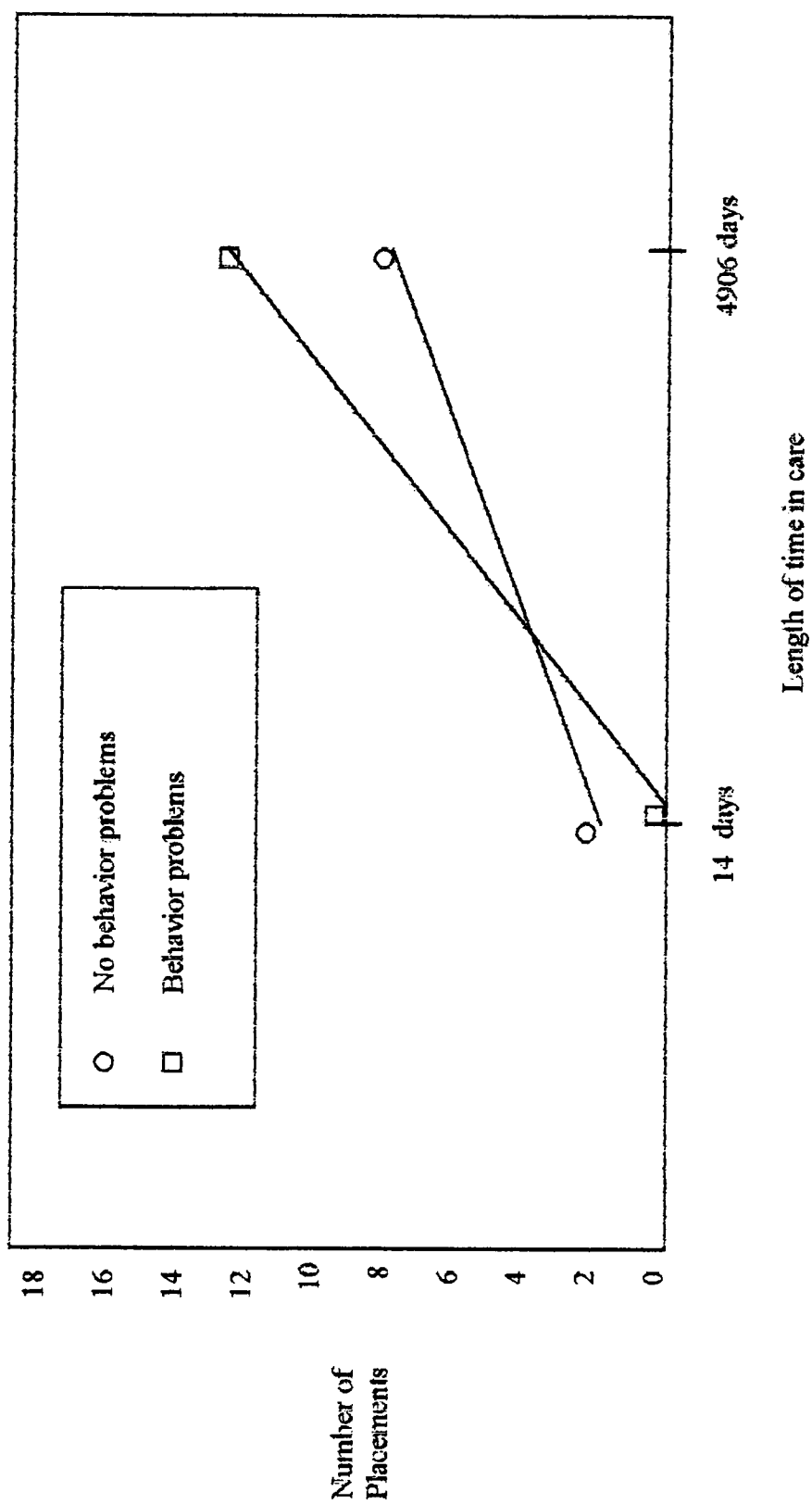


Figure 6. The effect of the presence of length of time in care on the number of placements as moderated by the presence of child behavior problems.

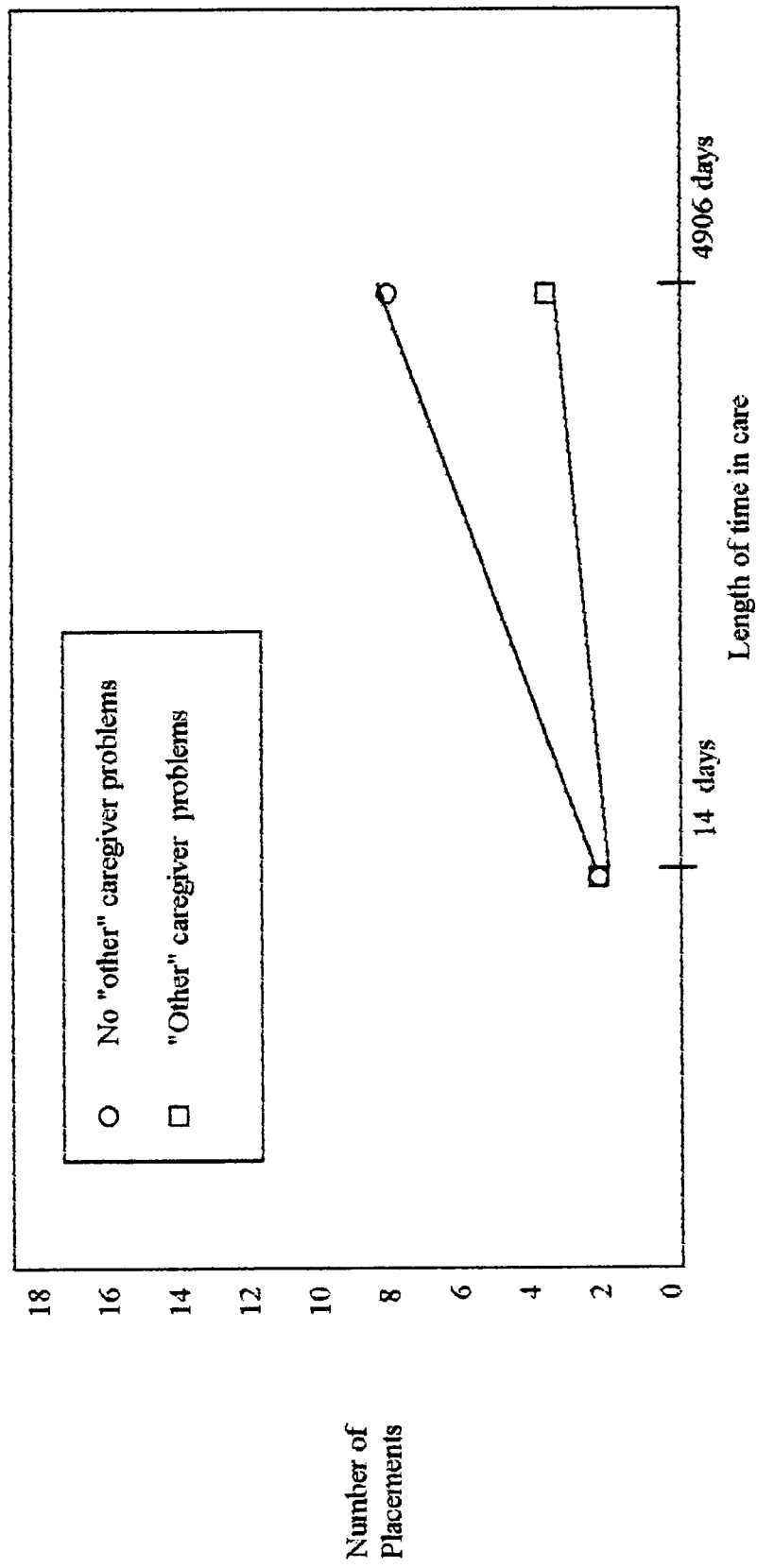


Figure 7. The effect of the presence of length of time in care on the number of placements as moderated by the presence of other caregiver problems.

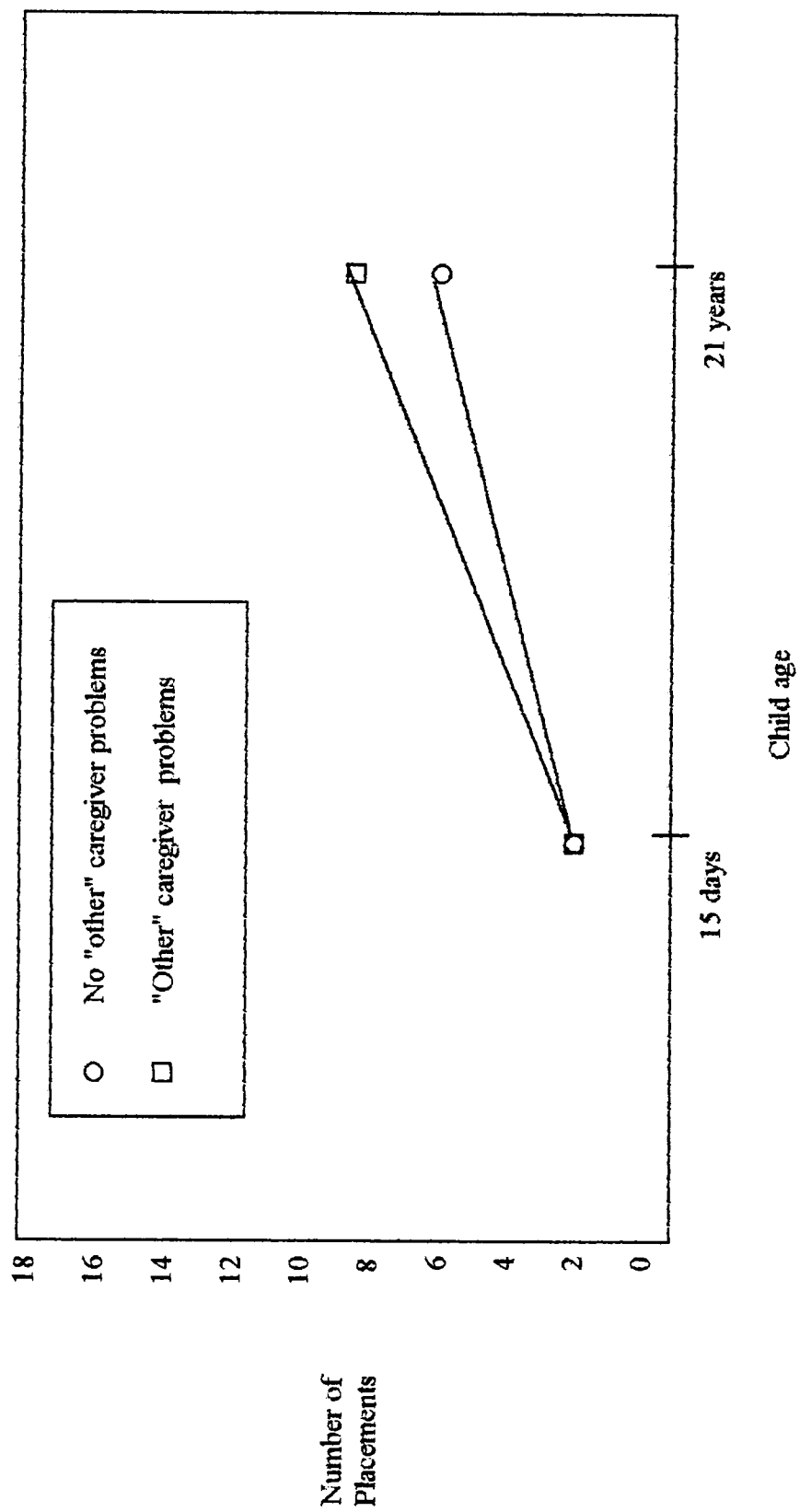


Figure 8. The effect of the presence of child age on the number of placements as moderated by the presence of other caregiver problems.

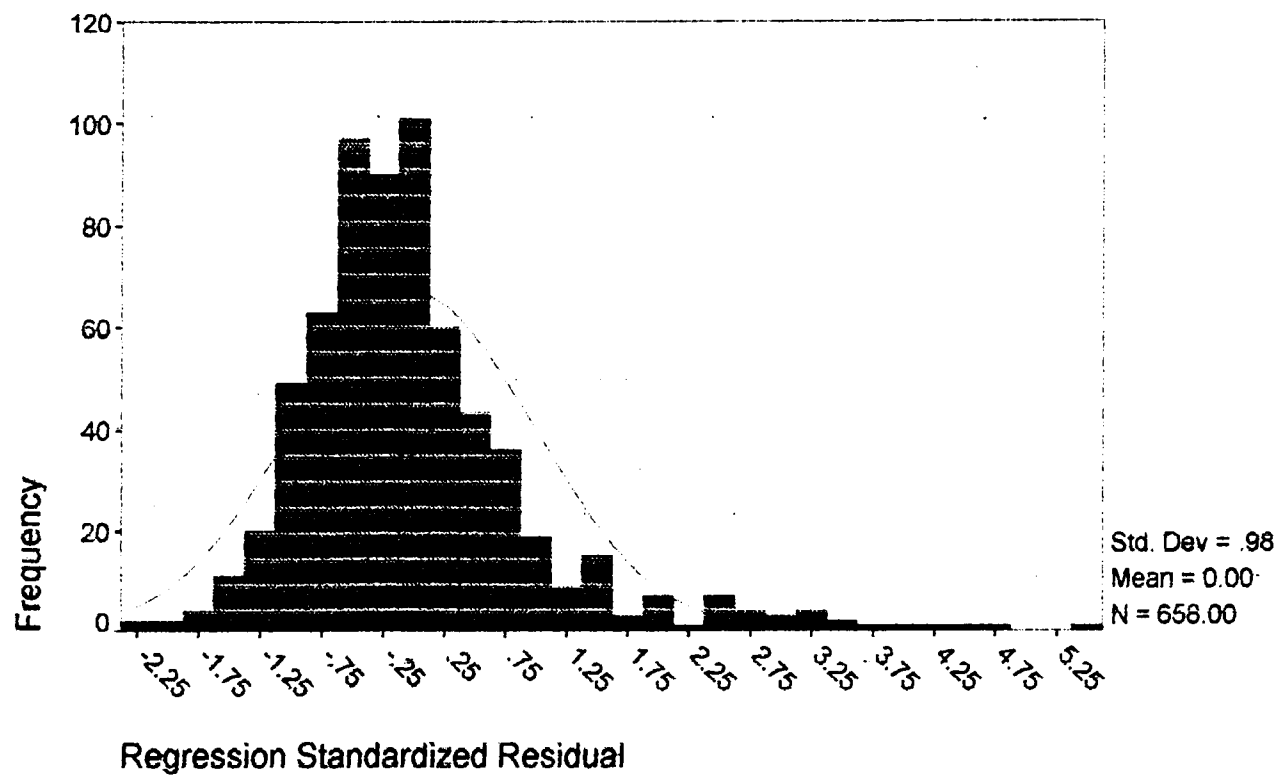


Figure 9. Residuals Against Dependent Variable

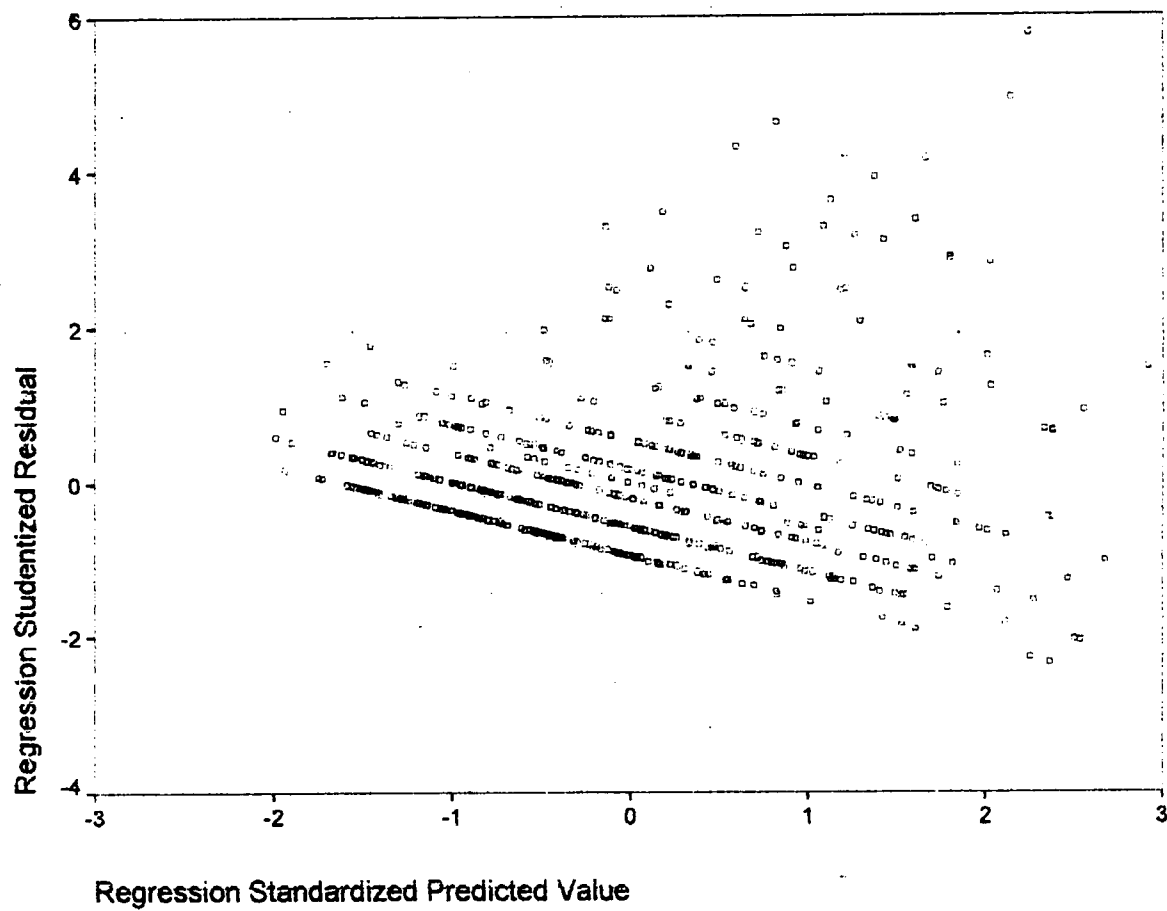


Figure 10. Scatterplot: Residuals Against Predicted Values

Table 10

NBRM Results

Equation 1, Block 1					
Effect of Control Variables on Number of Placements					
Variables	B	SE	Odds Ratio	t	p (Two-tailed)
Special needs (general)	.27	.98	1.30	2.75	.01
Length of time in care	-.99E-04	.43E-04	1.00	-2.30	.02
Reason for entry into care					
Physical abuse	-.05	.11	.95	-.45	.66
Sexual abuse	-.11	.11	.90	-1.03	.30
Neglect	.05	.07	1.05	.70	.49
Child behavior problem	-.10	.07	.90	-1.54	.12
Other caregiver problem	.20	.08	1.22	2.68	.01
Other child problem	.01	.10	1.02	.14	.88
Court adjudication					
Assessment	-.10	.11	.90	-.89	.37
Delinquency/felony	-.13	.08	.88	-1.66	.09
Delinquency/misdemeanor	.12	.08	1.13	1.40	.16
Dependency/neglect/abuse	-.21	.06	.81	-3.43	.00
Unruly	.08	.07	1.08	1.15	.25
Other	.25	.12	1.28	2.01	.04
Department assigned custody					
Children's Services	-.05	.07	.95	-.67	.50
Youth Development	.29	.09	1.34	3.45	.00
Mental Health/Education	-.24	.14	.79	-1.78	.07
Missing data variables					
Length of time in care	.34	.15	1.40	.22	.82
Reason for removal	-.40	.13	.67	-.10	.31
Child age	.14E-03	.23E-04	1.00	6.46	.00
Step 1 change					
Log Likelihood function = -1334.19 (df = 17,621), p = <.001					
Model improvement = Chi-square = 231.90 (df = 17,621), p = <.001					

Table 10 (cont.)

Equation 2, Block 1					
Effect of Hypothesized Control Variables					
Variables	B	SE	Odds Ratio	t	p (Two-tailed)
Length of time in care	-.10E-03	.43E-04	.99	-2.38	.02
Reason for entry into care					
Physical abuse	-.06	.11	.93	-.59	.55
Sexual abuse	-.10	.11	.90	-.93	.35
Neglect	.04	.07	1.04	.64	.52
Child behavior problem	-.09	.07	.91	-1.49	.14
Other caregiver problem	.21	.08	1.23	2.73	.01
Other child problem	.02	.10	1.02	.16	.87
Court adjudication					
Assessment	-.09	.12	.91	-.79	.43
Delinquency/felony	-.13	.08	.88	-1.73	.08
Delinquency/misdemeanor	.12	.08	1.13	1.46	.14
Dependency/neglect/abuse	-.21	.06	.81	-3.40	.00
Unruly	.09	.07	1.09	1.29	.20
Other	.22	.12	1.25	1.88	.06
Department assigned custody					
Children's Services	-.04	.07	.96	-.56	.58
Youth Development	.29	.08	1.34	3.47	.00
Mental Health/Education	-.25	.12	.77	-1.88	.06
Missing data variables					
Length of time in care	.05	.16	1.05	.30	.76
Reason for removal	-.14	.14	.87	-.96	.34
Child age	.17E-03	.21E-03	1.00	7.93	.00
Step 1 change					
Log Likelihood function = -1340.11 (df = 16,622), p = <.001					
Model improvement = Chi-square = 220.11 (df = 16,622), p = <.001					
Equation 2, Block 2					
Effect of Special Needs Type on Number of Placements					
Variables	B	SE	Odds Ratio	t	p (Two-tailed)
Emotional/behavioral	.15	.08	1.17	2.04	.04
Physical disability	-.01	.15	.99	-.09	.93
Mental Retardation	-.11	.11	.90	-1.00	.32
Non-MR developmental delay	-.08	.09	.92	-.93	.35
Chronic/acute illness	-.08	.09	.92	-.83	.41
Alcohol/substance abuse	.26	.07	1.29	3.60	.00
Step 2 change					
Log likelihood function = 1328.92 (df = 22,616), p = <.001					
Model improvement = Chi Square = 22.37 (df = 6,632), p = <.001					

Table 10 (cont.)

Equation 3, Block 1					
Same as equation 2					
Variables	<u>B</u>	<u>SE</u>	Odds Ratio*	<u>t</u>	<u>p</u> (Two-tailed)
Same as equation 2					
Step 1 change					
Same as equation 2					
Block 2					
Effect of Additional Special Needs Variables on Number of Placements					
Variables	<u>B</u>	<u>SE</u>	Odds Ratio	<u>t</u>	<u>p</u> (Two-tailed)
Multiple special needs	.05	.11	1.05	.47	.64
Number of special needs (count)	.03	.05	1.03	.63	.53
Step 2 change					
Log likelihood function = -1338.31 (<u>df</u> = 18,620). <u>p</u> = <.001					
Model improvement = Chi Square = 3.59 (<u>df</u> = 2,636), <u>p</u> = .17					

Table 10 (cont.)

Equation 5, Block 1					
Same as equation 1					
Variables	<u>B</u>	<u>SE</u>	Odds Ratio *	<u>t</u>	<u>p</u> (Two-tailed)
Same as equation 1					
Step 1 change					
Same as equation 1					
Block 2					
Effect of Restrictiveness of Care Variables on Number of Placements					
Variables	<u>B</u>	<u>SE</u>	Odds Ratio	<u>t</u>	<u>p</u> (Two-tailed)
Restrictiveness of care					
Increase	.27	.06	1.31	4.51	.00
Decrease	-.04	.06	.96	-.59	.56
Same	-.21	.04	.81	-4.69	.00
Missing data variable					
Restrictiveness of care	.31	.07	1.37	4.67	.00
Step 2 change					
Log likelihood function = -1308.11 (df = 20,618), <u>p</u> = <.001					
Model improvement = Chi Square = 52.17 (df = 3,635), <u>p</u> = <.001					

Table 10 (cont.)

Equation 6, Block 1					
Same as equation 1					
Variables	B	SE	Odds Ratio	t	p (Two-tailed)
Same as equation 1					
Step 1 change					
Same as equation 1					
Block 2					
Effect of First and Most Recent Placement Types on Number of Placements					
Variables	B	SE	Odds Ratio	t	p (Two-tailed)
First placement					
Diagnostic shelter	.11	.09	1.10	1.34	.18
Emergency shelter	.38	.08	1.46	5.61	.00
Birth/adoptive family	.21E-02	.13	1.00	.02	.99
Foster home (all types)	-.32	.07	.73	-4.17	.00
Relative's home	.20	.13	.81	-1.52	.13
Other misc. placement	.02	.12	1.01	.16	.87
Other group home setting	-.20	.10	.82	-2.08	.04
"Lock down" facility	-.14	.14	.87	-1.01	.31
Intensive residential/psychiatric	.56E-02	.10	1.01	.06	.96
Most recent placement					
Residential treatment - L 1	-.27	.11	.76	-2.44	.01
Residential treatment - L 2	.01	.10	1.01	.11	.91
Runaway	.19	.10	1.21	2.00	.04
Therapeutic foster home	-.30	.13	.74	-2.27	.02
Birth/adoptive family	.16	.08	1.17	1.89	.06
Foster home (general)	-.31	.31	.73	-4.18	.00
Relative's home	-.07	.07	.93	-.67	.50
Other misc. placement	-.11	.09	.90	-1.28	.20
Other group home setting	.08	.09	.90	.91	.36
"Lock down" facility	.45	.13	1.56	3.40	.00
Intensive residential/psychiatric	.18	.09	1.20	1.94	.05
Step 2 change					
Log likelihood function = -1289.88 (df = 35,603). p = <.001					
Model improvement = Chi Square = 88.64 (df = 18,630). p = <.001					

	Overall Sample	Top 5% of Time in Care
Mean number of placements	3.5 (sd = 3.1)	2.2 (sd = 2.3)
Mean length of time in care (years)	2.2 (sd = 2.4)	9.8 (sd = 1.6)
Court adjudication		
Dependency/neglect/abuse	58.8%	96.7%
Unruliness	14.9%	3.3%
Delinquency/felony	8.9%	
Delinquency/wildemeanor	8.4%	
Assessment	4.5%	
Other	4.7%	
Reason for entry into care		
Child behavior problem	36.3	
Neglect by caretaker	28.8	20.7
Other caregiver reason	13.5	31.0
Physical abuse	8.0	20.7
Sexual abuse	7.0	17.7
Other child reason	6.4	10.3
Mean age of child (years)	12.4 (sd = 5.5)	15.4 (sd = 3.2)
Mean age of child at custody	10.1 (sd = 5.7)	6.6 (sd = 2.3)
Department assigned custody		
Human Services	82.1%	100%
Youth Development	15.1%	
Education/Mental Health	2.8%	
Presence of special need(s)	76.7%	80.6%
Multi-handicapped	37.5%	45.2%
Number of disabilities		
0	24.5%	19.4%
1	38.0%	35.5%
2	25.2%	32.3%
3	9.7%	9.7%
4	2.3%	3.2%
5	.3%	
Initial placement		
Foster home	41.3%	67.7%
Emergency shelter	12.7%	3.2%
Diagnostic shelter	7.5%	
Intensive residential/psychiatric	7.5%	
Other group setting	7.5%	29.0%
Relative home	7.0%	
Lock down facility	5.6%	
Birth/adoptive family	5.4%	
Current placement		
Foster home	33.0%	53.3%
Birth/adoptive home	12.6%	
Relative home	8.0%	3.3%
Therapeutic foster home	7.4%	10.0%
Residential treatment - Level 1	6.6%	10.0%
Other group setting	6.1%	
Residential treatment - Level 2	5.8%	10.0%
Other misc/ placement	5.7%	1.3%
Intensive residential/psychiatric	5.5%	6.7%
Runaway	5.2%	3.3%
Lock down facility	4.2%	

Figure 11. Comparison of Children in Care the Longest with Overall Sample

VITA

Maureen Grimes Croft was born December 14, 1964. She graduated from Texas A&M University with a Bachelor of Science degree in Psychology in 1987 and received a Master of Social Work degree from the University of Houston in 1989. She spent several years working first as the Supervisor of Adoptions at DePelchin Childrens Center in Houston and later as the Adoption Services Director for Catholic Charities of the Diocese of Pittsburgh. She is licensed to practice social work in Texas (LMSW) and Pennsylvania (LSW) and holds Academy of Certified Social Workers (ACSW) certification. While working in the field of social work Maureen gained clinical experience working with birthparents, children and adoptive families through the provision of pre- and post-placement services, counselling and lifebook work, and post adoption counselling and search services. She served as a member of the Pennsylvania Western Region One Church, One Child Advisory Board from 1991-1992, the Adoption Committee of the Pennsylvania Catholic Conference from 1991-1994, and the Program Committee of Three Rivers Adoption Council from 1992-1994. She also served as a field instructor for the University of Pittsburgh MSW program from 1992-1993. In 1994, she entered the University of Tennessee to pursue a PhD in social work and was employed as a Graduate Teaching Assistant and a Graduate Research Assistant until awarded the PhD in 1999.