

**EVOLUTIONARY THEORY AND KINSHIP FOSTER CARE:
AN INITIAL TEST OF TWO HYPOTHESES**

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I. INTRODUCTION

Public child welfare agencies regularly recruit foster children's relatives for service as foster parents.¹ A significant percentage of foster children now live with kin. As of September 30, 2006, 24% of children in placement in the United States were living with kin foster parents,² and "kin" is regularly defined to include non-genetically related individuals who had established a relationship with the child prior to his or her placement in foster care (e.g., family friend, neighbor).³ Excluding children who were placed in group homes, institutions, and other non-family home settings, over 32% of children in foster home placements lived with kin foster parents.⁴

Federal law encourages and supports the use of kin as foster parents. For more than ten years, the United States Department of Health and Human Services has supported demonstration projects to address and

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¹ Rob Geen, *The Evolution of Kinship Care Policy and Practice*, 14 THE FUTURE OF CHILDREN 131, 132 (2004).

² CHILDREN'S BUREAU, U.S. DEP'T OF HEALTH & HUMAN SERVS., THE AFCARS REPORT – PRELIMINARY FY 2006 ESTIMATES AS OF JANUARY 2008 (14) (2008), http://www.acf.hhs.gov/programs/cb/stats_research/afcars/tar/report14.htm.

³ See Geen, *supra* note 1, at 132.

⁴ *Cf.* CHILDREN'S BUREAU, *supra* note 2. The placement settings (as of September 2006) of children in foster care, discounting group homes, institutions, and other non-family settings, was 3% in pre-adoptive homes, 24% in foster family homes, and 5% in trial homes. *Id.*

improve kinship care.⁵ By enacting welfare reform legislation, Congress expressly encouraged states to give preference to relatives when deciding where to place a particular child.⁶ In addition, Congress effectively expressed a preference for kin placements in the Adoption and Safe Families Act,⁷ excluding them from time requirements for seeking termination of parental rights.⁸ Congress views these placements as desirable and stable, requiring no change to achieve permanency for the affected child.⁹ Most recently, the federal Fostering Connections to Success and Increasing Adoption Act¹⁰ requires states to identify all relatives when children are removed from parental custody, and to inform the relatives of their option to become foster parents and about available support services.¹¹

Evolutionary theory provides a conceptual framework for examining and assessing public policies and laws that promote kinship foster care.¹² The evolutionary concepts of inclusive fitness and degree of relatedness support a prediction that kin foster parents will tend to treat foster children more favorably than non-kin foster parents.¹³ These concepts begin with the widely accepted premise that an individual benefits not only directly from his or her own reproductive success, but also indirectly from the reproductive success of genetically related others through the passage of common genetic material to future generations.¹⁴ Because of the indirect benefits realized from the reproductive success of kin, natural selection

⁵ See Rob Geen & Jill Duerr Berrick, *Kinship Care: An Evolving Service Delivery Option*, 24 CHILD. & YOUTH SERVICES REV. 1, 3 (2002) (discussing federal and state policies supporting kinship care).

⁶ *Id.* at 3–4.

⁷ 42 U.S.C. § 675(5)(E)(i) (2006).

⁸ See *id.*

⁹ See Geen & Berrick, *supra* note 5, at 4.

¹⁰ Fostering Connections to Success and Increasing Adoptions Act of 2008, Pub. L. No. 110-351, § 103, 122 Stat. 3956, 3956.

¹¹ *Id.*

¹² Cf. David J. Herring, *Kinship Foster Care: Implications of Behavioral Biology Research*, 56 BUFF. L. REV. 495, 495–96 (2008) (proposing that behavioral biology research on kinship relationships and expected levels of parental investment provides a conceptual framework for analyzing kinship foster care).

¹³ *Id.* at 520–21.

¹⁴ See *id.* at 521 (citing William D. Hamilton, *The Genetical Evolution of Social Behavior*, 7 J. THEORETICAL BIOLOGY 1, 16 (1964)).

pressure has favored a trait of discriminative altruism toward kin.¹⁵ “[A]n individual who possesses a trait of altruism [for kin] would reap net reproductive benefits as long as the reproductive costs incurred in assisting [a particular kin member] are less than the reproductive benefits realized by the” kin member,¹⁶ discounted by the degree of relatedness between the altruist and the kin member.¹⁷ In evolutionary environments, the reproductive benefits of altruistic behavior toward kin, discounted by the degree of relatedness, often exceed the reproductive costs of this behavior.¹⁸ “Therefore, as reproduction occurs over time, the trait of [kinship] altruism becomes prevalent, if not universal”¹⁹

Noting the effect of degree of relatedness separately is useful. The closeness of the genetic relationship between the altruist and a particular kin member is likely to determine, in part, the extent of altruistic behavior toward the kin member. For example, the reproductive benefits realized through altruistic acts toward first-degree kin (i.e., children and siblings) are appropriately discounted by 50%, reflecting the fact that an individual shares with a first-degree kin member approximately 50% of the genetic material that varies in a population.²⁰ In comparison, the reproductive benefits realized through altruistic acts toward second-degree kin (i.e., grandchildren, aunts, and uncles) are appropriately discounted to 25%, and those realized through third-degree kin (e.g., cousins and great grandchildren) are appropriately discounted to 12.5%.²¹

To summarize, an individual who possesses the trait of kinship altruism is likely to favor those he or she perceives as members of his or her kin group. He or she would provide kin members with beneficial treatment that, within environmental settings that were prevalent across evolutionary history, tended to increase kin members’ reproductive success.²² Individuals with this trait would not only tend to favor kin over non-kin, but also would tend to favor close kin over more distantly related

¹⁵ See *id.* at 520 (citing Hamilton, *supra* note 14).

¹⁶ *Id.*

¹⁷ See *id.* at 521 (“[W]hile individuals are likely to favor kin over non-kin, not all kin are likely to receive the same degree of beneficial treatment. This is because the closeness of the biological relationship (degree of relatedness) varies among different types of kin.”).

¹⁸ See *id.* at 520–21 (citing Hamilton, *supra* note 14).

¹⁹ *Id.* at 520; see ROBERT TRIVERS, SOCIAL EVOLUTION 109–10 (1985).

²⁰ See Herring, *supra* note 12, at 520 (citing Hamilton, *supra* note 14).

²¹ *Id.* at 520–21 (citing Hamilton, *supra* note 14, at 2).

²² See *id.* at 521 (citing Hamilton, *supra* note 14).

kin.²³ This latter point indicates that evolutionary concepts support a prediction that certain types of kin foster parents will treat foster children more favorably than other types of kin foster parents.²⁴

Two additional evolutionary concepts support and add complexity to this prediction. In considering paternity certainty, evolutionary theorists recognize that women can be virtually certain the children they care for are genetically related to them. In contrast, men face a significantly higher risk of providing care to children who are not biologically related to them.²⁵ Therefore, biological relationships through male lineage are less certain.

This concept of paternity certainty has implications for extended kin relationships. Reduced paternity certainty decreases the probability of genetic relatedness in a way that compounds multiplicatively as the number of kinship links through males increases.²⁶ This difference in probability as to genetic relationship is likely to give rise to discrimination among kin, with patrilineal kin being less likely to receive favorable treatment than matrilineal kin.²⁷

In contemplating the concept of sex effects, evolutionary theorists note that women have a much lower potential rate of reproduction than men.²⁸ Thus, women have a higher stake in each biologically related child, both children of their own and of kin. This gives rise to the probability that women will invest significantly more in kin than men.²⁹

Based on the consideration of relevant evolutionary concepts, individuals are likely to invest more in close kin than in more distant kin.³⁰ Also, individuals are likely to invest more in matrilineal kin than in

²³ *Id.*; see also TRIVERS, *supra* note 19, at 109 (“Since aiding one kind of relative must usually conflict with aiding another . . . we expect mechanisms of choice to evolve that reflect differential degrees of relatedness.”).

²⁴ Herring, *supra* note 12, at 521.

²⁵ See *id.* at 522 (citing DAVID BUSS, *EVOLUTIONARY PSYCHOLOGY: THE NEW SCIENCE OF THE MIND* 200–01 (3d ed. 2008)).

²⁶ Steven J. C. Gaulin et al., *Matrilateral Biases in the Investment of Aunts and Uncles: A Consequence and Measure of Paternity Uncertainty*, 8 *HUM. NATURE* 139, 140 (1997).

²⁷ See Herring, *supra* note 12, at 523 (citing BUSS, *supra* note 25, at 246–52; Gaulin et al., *supra* note 26; Joonghwan Jeon & David M. Buss, *Altruism Towards Cousins*, 274 *PROC. ROYAL SOC’Y B.* 1181, 1181 (2007)).

²⁸ See *id.* (citing BUSS, *supra* note 25, at 107, 172).

²⁹ See *id.* at 524 (citing Gaulin et al., *supra* note 26, at 201–02, 220–23).

³⁰ See *id.* (citing BUSS, *supra* note 25, at 260).

patrilineal kin.³¹ In addition, women are likely to invest more in kin than are men.³² To illustrate the last two points, a child's maternal grandmother is likely to exhibit a higher level of altruistic behavior toward the child than the child's paternal grandfather.

This theoretical framework supports the formulation of two hypotheses concerning kinship foster care. The first hypothesis is that foster children are likely to benefit from higher levels of parental investment and realize better outcomes if placed with genetic kin rather than genetically unrelated foster parents.³³ The second hypothesis is that children in kinship foster care placements are likely to benefit from higher levels of parental investment and realize better outcomes if placed with some types of kin (e.g., maternal grandmother) than others (e.g., paternal grandfather).³⁴

Child welfare researchers have begun to test the first hypothesis. The research indicates that kinship caregivers have significantly fewer economic and physical resources than non-kin caregivers.³⁵ In addition, they receive less training, services, and support.³⁶ Despite these deficits, Gary Cuddeback, in his 2004 comprehensive review of the relevant research literature, found the evidence that child functioning is better in one placement setting compared to the other was inconclusive,³⁷ although some evidence suggests that kin are less likely to maltreat children placed with them.³⁸ As to adult functioning, the evidence is also inconclusive.³⁹

³¹ *E.g., id.* at 524–25 (citing BUSS, *supra* note 25, at 246; Gaulin et al., *supra* note 26; Jeon & Buss, *supra* note 27).

³² *E.g., id.* at 525 (citing BUSS, *supra* note 25, at 220–23).

³³ *See id.* at 506–07 (“[Welfare caseworkers] appear to feel that children are better off in the care of kin. They perceive children in kinship placements as having a stronger sense of belonging and experiencing more continuity in their lives.”).

³⁴ *Id.* at 520 (citing Mark F. Testa, *The Quality of Permanence—Lasting or Binding? Subsidized Guardianship and Kinship Foster Care as Alternatives to Adoption*, 12 VA. J. SOC. POL’Y & L. 499, 522–34 (2005)).

³⁵ *See* Jennifer Ehrle & Rob Geen, *Kin and Non-Kin Foster Care—Findings from a National Survey*, 24 CHILD. & YOUTH SERVICES REV. 15, 19–20 (2002).

³⁶ *See generally* Geen, *supra* note 1, at 138–39 (discussing how child welfare agencies tend to supervise kinship care families less than non-kin foster families).

³⁷ Gary S. Cuddeback, *Kinship Family Foster Care: A Methodological and Substantive Synthesis of Research*, 26 CHILD. & YOUTH SERVICES REV. 623, 631 (2004); Herring, *supra* note 12, at 505.

³⁸ *See* Cuddeback, *supra* note 37, at 632; Herring, *supra* note 12, at 505.

³⁹ *See* Cuddeback, *supra* note 37, at 628.

Kinship placements do appear to fare better than non-kin placements in terms of stability.⁴⁰ Studies have consistently found that kinship placements are more stable than non-kin placements, with one study finding that children in non-kinship placements were about three times more likely to experience placement disruption than children in kinship placements.⁴¹

Several researchers have responded to Cuddeback's call for more comparative research in this area. One study examined short-term child welfare outcomes using a comparative design that involved a matched sample of children in kinship care and foster care.⁴² The researchers found that after controlling for demographic and placement entry characteristics, children in kinship care had significantly fewer placements than did children in non-kin foster care.⁴³ In addition, children in kinship care were less likely to have an allegation of maltreatment while in care, less likely to have achieved reunification with their genetic parents, and less likely to be involved in the juvenile justice system.⁴⁴ The researchers found that there were no significant differences between the two groups in terms of number of days in out-of-home care, rate of adoption placements, and frequency of reentry following family reunification or other permanent placements.⁴⁵

Another study examined the influence of kinship care on behavioral problems after eighteen and thirty-six months in out-of-home care.⁴⁶ The study analyzed data on children who had entered out-of-home care, which

⁴⁰ Herring, *supra* note 12, at 506 (citing Cuddeback, *supra* note 37, at 629; Patricia Chamberlain et al., *Who Disrupts from Placement in Foster and Kinship Care?*, 30 CHILD ABUSE & NEGLECT 409 (2006)).

⁴¹ See Chamberlain et al., *supra* note 40, at 410, 415 (noting that higher rates of placement disruption correlate with high child welfare agency costs, high rates of subsequent reentry into foster care following family reunification, and high emotional costs for foster parents and foster children). Affected children are more likely to exhibit subsequent behavioral problems and to experience higher rates of delinquency. *See id.* at 410–11.

⁴² Marc A. Winokur et al., *Matched Comparison of Children in Kinship Care and Foster Care on Child Welfare Outcomes*, 89 FAMILIES SOC'Y: J. CONTEMP. SOC. SCI. 338, 340 (2008).

⁴³ *See id.* at 341–42.

⁴⁴ *See id.* at 342–43.

⁴⁵ *See id.*

⁴⁶ David M. Rubin et al., *Impact of Kinship Care on Behavioral Well-being for Children in Out-of-Home Care*, 162 ARCHIVES PEDIATRICS & ADOLESCENT MED. 550, 551 (2008).

came from the National Survey of Child and Adolescent Well-Being.⁴⁷ The primary outcome measure was the child's behavioral well-being at eighteen and thirty-six months, as measured by the Child Behavior Checklist.⁴⁸ Controlling for a child's baseline risk, reunification status, and placement stability, children who were assigned to kin foster care within thirty days had a significantly lower probability of behavioral problems than children assigned to non-kin foster care.⁴⁹ In addition, children who moved to kinship care after thirty days in non-kin foster care were more likely to have behavioral problems than children placed in kinship care within thirty days, but were less likely to have behavioral problems than children assigned to non-kin foster care only.⁵⁰

A third study expressly relied on evolutionary theory in comparing kin and non-kin foster care placements, carefully defining "kin" to include only genetically related individuals.⁵¹ Drawing directly on the concepts of inclusive fitness and degree of relatedness, the researcher hypothesized that maltreated child/kin foster mother dyads would have a relationship advantage in terms of emotional closeness over maltreated child/non-kin foster mother dyads.⁵² The researcher stated that the expected relationship advantage "is presumed to be the result of greater emotional investments from kin foster mothers and kin foster children in comparison to non-kin dyads and will be reflected in higher scores on measures of emotional availability."⁵³

The researcher examined a sample of foster mothers and their foster children using emotional availability measures.⁵⁴ The foster children were two to eight years-old and had been referred to a mental health clinic for

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *See id.* at 553.

⁵⁰ *See id.* ("The estimate of behavioral problems was 46% if all children had been assigned to general foster care only, compared with 32% if the children had been assigned to early kinship care. If kinship care had occurred late, by contrast, the estimated risk of behavioral problems was 39%.")

⁵¹ *See* Michael J. Lawler, *Maltreated Children's Emotional Availability with Kin and Non-Kin Foster Mothers: A Sociobiological Perspective*, 30 *CHILD. & YOUTH SERVICES REV.* 1131, 1134–35 (2008).

⁵² *See id.* at 1135.

⁵³ *Id.*

⁵⁴ *See id.* at 1134–35.

disruptive behavior.⁵⁵ The data failed to support the hypothesis.⁵⁶ The researcher stated:

In relation to the control variables of child's age, foster mother's age, foster mother's education, and placement duration, kin status of foster mothers did not add to the prediction of emotional availability In this study, maltreated child-kin foster mother dyads did not appear to have an advantage in relationship quality over maltreated child-non-kin foster mother dyads.⁵⁷

In the end, the researcher noted significant limitations of the study (e.g., examining only maltreated children with significant externalizing and disruptive behavior problems) and called for further research guided by evolutionary concepts.⁵⁸

Another researcher also drew on the concept of degree of relatedness by examining the permanency of child welfare placements.⁵⁹ His study began to address differences in levels of parental investment among types of kin.⁶⁰ The study's results indicated kinship's strong effect on permanence, finding that differences by degree of relatedness were significant.⁶¹ For example, grandparents were significantly more likely to intend to raise the foster child to adulthood than more distant relatives and non-relatives.⁶² The researcher concluded that the closer the kinship relationship between foster parent and foster child, the more likely the child is to achieve a high-quality placement in terms of permanency.⁶³

The researcher's decision to compare different types of kin placements based on differences in degree of relatedness constitutes an initial step toward more sophisticated analyses of kinship care. A line of behavioral

⁵⁵ *Id.* at 1135.

⁵⁶ *See id.* at 1139 ("This study did not find relationship quality differences between maltreated child-kin foster mother dyads and maltreated child-non-kin foster mother dyads with the current sample of children referred for outpatient mental health services.").

⁵⁷ *Id.*

⁵⁸ *See id.* at 1139–41.

⁵⁹ *See* Mark F. Testa, *The Quality of Permanence—Lasting or Binding? Subsidized Guardianship and Kinship Foster Care as Alternatives to Adoption*, 12 VA. J. SOC. POL'Y & L. 499, 517 (2005).

⁶⁰ *See id.*

⁶¹ *Id.* at 521.

⁶² *See id.* at 523; Herring, *supra* note 12, at 516.

⁶³ *See* Testa, *supra* note 59, at 529; Herring, *supra* note 12, at 517–18.

biology research that expressly acknowledged the evolutionary concepts of paternity certainty and sex effects support these more sophisticated analyses.⁶⁴ This line of research indicated that the level of parental investment will vary even among kin who share the same degree of relatedness to a subject child.⁶⁵

The line of research incorporating paternity certainty and sex effects began with two sets of grandparent investment studies. The first set relied on historical population data to examine child nutrition and/or mortality. A study of church register entries from Ostfriesland, Germany from 1720 to 1874 is representative.⁶⁶ The researchers “found that when a maternal grandmother had been alive at the time of a child’s birth, the child experienced significantly less risk of infant mortality during the first five years of life.”⁶⁷ “The researchers also found that the presence of a paternal grandmother had no significant positive effect on a child’s survival, with a statistically significant negative effect during the first month of life.”⁶⁸ In addition, the researchers found that the presence of grandfathers did not affect a child’s chances of survival.⁶⁹

The second set of grandparent investment studies involves contemporary subjects. A study that used a sample of young German

⁶⁴ See Herring, *supra* note 12, at 519.

⁶⁵ *Id.*

⁶⁶ See Eckart Voland & Jan Beise, *Opposite Effects of Maternal and Paternal Grandmothers on Infant Survival in Historical Krummhörn*, 52 BEHAV. ECOLOGY & SOCIOBIOLOGY 435 (2002).

⁶⁷ Herring, *supra* note 12, at 529 (citing Voland & Beise, *supra* note 66, at 438).

⁶⁸ *Id.* (citing Voland & Beise, *supra* note 66, at 439–41).

⁶⁹ See Voland & Beise, *supra* note 66, at 441; Herring, *supra* note 12, at 529–30. A study of population registers from a village in central Japan from 1671 to 1871 and a study of the parish and census records of Cambridgeshire, England from 1770 to 1861 made similar findings concerning the positive effect of maternal grandmothers and the lack of effect, or even the negative effect, of other grandparents. See Cheryl Sorenson Jamison et al., *Are All Grandmothers Equal? A Review and a Preliminary Test of the “Grandmother Hypothesis” in Tokugawa, Japan*, 119 AM. J. PHYSICAL ANTHROPOLOGY 67, 71 (2002); Gillian Ragsdale, *Grandmothering in Cambridgeshire, 1770–1861*, 15 HUM. NATURE 301, 301–03 (2004). In addition, a study that examined both child mortality and child weight gain data from two villages in rural Gambia from 1950 to 1970 found that maternal grandmothers were the only grandparent type to have a consistent positive effect. See Rebecca Sear et al., *Maternal Grandmothers Improve Nutritional Status and Survival of Children in Rural Gambia*, 267 PROC. ROYAL SOC’Y B. 1641, 1642–44 (2000).

adults is representative.⁷⁰ The researchers questioned the subjects about the level of caregiving and solicitude (investment) provided by each of their grandparents.⁷¹ The results were largely consistent with predictions based on differential paternity certainty.⁷² Maternal grandmothers invested the most in grandchildren, followed by maternal grandfathers, paternal grandmothers, and paternal grandfathers.⁷³ The difference in the level of investment was statistically significant between each type of grandparent.⁷⁴ This study has been replicated several times, with one team of researchers noting, “[T]hese studies suggest that patterns of grandparental investment are a robust phenomenon not easily explained by alternatives such as grandparental gender, residential distance, grandparental age, or number of living grandparents.”⁷⁵

Some researchers have drawn on the concepts of paternity certainty and sex effects to examine differential investment by aunts and uncles. An

⁷⁰ See Harald A. Euler & Barbara Weitzel, *Discriminative Grandparental Solicitude as Reproductive Strategy*, 7 HUMAN NATURE 39, 44–45 (1996).

⁷¹ See BUSS, *supra* note 25, at 247–48 (referring to a study performed by W.T. DeKay on grandparental investment); Herring, *supra* note 12, at 532 (“Euler and Weitzel conducted a study that replicated an earlier unpublished study by DeKay.”).

⁷² See Euler & Weitzel, *supra* note 70, at 45–46; Herring, *supra* note 12, at 533.

⁷³ Euler & Weitzel, *supra* note 70, at 45–46; Herring, *supra* note 12, at 553.

⁷⁴ See Euler & Weitzel, *supra* note 70, at 45–48 (finding differences in levels of investment after controlling for residential proximity of grandparents, age of grandparents, and the availability of other grandparents); Herring, *supra* note 12, at 533.

⁷⁵ Simon M. Laham et al., *Darwinian Grandparenting: Preferential Investment in More Certain Kin*, 31 PERSONALITY & SOC. PSYCHOL. BULL. 63, 64 (2005) (citations omitted). See also Alexander Pashos, *Does Paternal Uncertainty Explain Discriminative Grandparental Solicitude? A Cross-Cultural Study in Greece and Germany*, 21 EVOLUTION & HUMAN BEHAV. 97, 97 (2000) (reporting findings consistent with Euler and Weitzel for German and urban Greek participants, but not for rural Greek participants); Richard L. Michalski & Todd K. Shackelford, *Grandparental Investment as a Function of Relational Uncertainty and Emotional Closeness with Parents*, 16 HUMAN NATURE 293–95 (2005); Elizabeth R. Chrastil et al., *Paternity Uncertainty Overrides Sex Chromosome Selection for Preferential Grandparenting*, 27 EVOLUTION & HUMAN BEHAV. 206, 215–20 (2006); Thomas V. Pollet et al., *Maternal Grandmothers do go the Extra Mile: Factoring Distance and Lineage into Differential Contact with Grandchildren*, 5 EVOLUTIONARY PSYCHOL. 832, 833 (2007); David I. Bishop et al., *Differential Investment Behavior Between Grandparents and Grandchildren: The Role of Paternity Uncertainty*, 7 EVOLUTIONARY PSYCHOL. 66, 68 (2009) (using only participants with four living grandparents and noting no significant difference in level of grandparental investment between maternal grandfathers and paternal grandmothers).

early study, which has since been replicated, involved U.S. undergraduates who completed a questionnaire that asked them to rate the level of investment by biologically related aunts and uncles.⁷⁶ The results indicated that matrilineal aunts invest the most, followed by patrilineal aunts, matrilineal uncles, and patrilineal uncles, with all distinctions being statistically significant.⁷⁷ These results confirmed hypothesized sex effects—women invest significantly more than men in their second-degree kin (i.e., nieces and nephews).⁷⁸ The results also confirmed the paternity certainty effect—matrilineal kin invest significantly more than patrilineal kin.⁷⁹

It is useful to note that the researchers who conducted the initial study of aunt and/or uncle investment constructed a rank listing of second-degree kin by expected level of investment.⁸⁰ They based the ranking on quantitative calculations for various kin relationships and levels of paternity certainty.⁸¹ One can take into account behavioral biology research that indicates sex effects to slightly alter the initial rank listing. This results in a listing that indicates that one would reasonably expect maternal grandmothers to invest the most, followed in descending order by matrilineal aunts, patrilineal aunts, matrilineal uncles, maternal grandfathers, paternal grandmothers, patrilineal uncles, and paternal grandfathers.⁸²

This preliminary rank listing of second-degree kin based on expected level of parental investment in related children provides a starting point for

⁷⁶ See Gaulin et al., *supra* note 26, at 141–42.

⁷⁷ See *id.* at 143–44; Herring, *supra* note 12, at 541.

⁷⁸ See Gaulin et al., *supra* note 26, at 145; Herring, *supra* note 12, at 541.

⁷⁹ See Gaulin et al., *supra* note 26, at 145; Herring, *supra* note 12, at 541; Brad R. Huber & William L. Breedlove, *Evolutionary Theory, Kinship, and Childbirth in Cross-Cultural Perspective*, 41 *CROSS-CULTURAL RES.* 196, 214–15 (2007). In addition to the research on second-degree kin, a pair of researchers completed a study that confirmed the effect of paternity certainty on third-degree kin relationships. Jeon & Buss, *supra* note 27. The study examined relations among cousins, finding that subjects were most willing to help mother's sister's children, followed in descending order by mother's brother's children, father's sister's children, and father's brother's children, with the distinction between the middle two categories not being statistically significant. See *id.* at 1184. These results coincide with the increasing number of uncertain biological links among types of cousins. See *id.* at 1184–85.

⁸⁰ See Gaulin et al., *supra* note 26, at 147–49.

⁸¹ See *id.*

⁸² Herring, *supra* note 12, at 547.

the formulation of testable hypotheses about types of kinship placement. For example, researchers could use the listing to hypothesize that maternal grandmothers who serve as foster parents for their grandchildren are likely to invest more resources than paternal grandmothers. One could also hypothesize that children placed with their maternal grandmothers are likely to achieve better adult outcomes than children placed with their paternal grandmothers.

Researchers could begin to test such hypotheses by analyzing administrative data from public child welfare agencies.⁸³ Large administrative data sets are unlikely to have detailed information related to parental investment, adult outcomes, or other variables relevant to the experiences and treatment of youth in the child welfare system, but they could provide a starting point for the comparison of various types of foster care placement.⁸⁴ This type of initial comparative research could provide a benchmark and guidance for subsequent research inquiries that involve the collection of primary data to obtain detailed measures of parental investment, child outcomes, and adult outcomes. Such an endeavor would produce new knowledge that would be potentially useful in making foster care placement decisions.⁸⁵

II. DATA AND METHODS

This article uses a large administrative data set to begin examining two primary hypotheses concerning kinship foster care placements derived from a consideration of evolutionary concepts and behavioral biology research. First, it examines whether children are more likely to experience better treatment and outcomes in kinship foster care as opposed to non-kin foster care. Second, it examines whether children in kinship foster care are

⁸³ Behavioral biology researchers and child welfare researchers have demonstrated the feasibility of examining large child welfare databases. See, e.g., MARTIN DALY & MARGO WILSON, *HOMICIDE* 61 (1988) (discussing society's passion for record-keeping and social scientists' ability to analyze those records); Testa, *supra* note 59, 515–18 (using interviews, surveys, and administrative data to analyze foster placement stability).

⁸⁴ See Joseph P. Ryan et al., *Juvenile Delinquency in Child Welfare: Investigating Group Home Effects*, 30 *CHILD. & YOUTH SERVICES REV.* 1088, 1097 (2008); Melissa Jonson-Reid & Richard P. Barth, *Probation Foster Care as an Outcome for Children Exiting Child Welfare Foster Care*, 48 *SOC. WORK* 348, 359 (2003), for illustrations of the usefulness and limits of administrative datasets. See Kermyt G. Anderson, *Relatedness and Investment in Children in South Africa*, 16 *HUM. NATURE* 1, 26 (2005), for a discussion of the strengths and weaknesses of using large-scale survey databases.

⁸⁵ See Herring, *supra* note 12, at 552–53.

more likely to experience better treatment and outcomes when placed with some types of kin rather than others.

The data includes a birth cohort of youth born between 1985 and 1994 who were involved with the child welfare system in Allegheny County, Pennsylvania. The data set is limited with regard to the range of individual and family characteristics expressed in the sample and with regard to the experience and outcome measures that it includes. However, the data set is unique in that it integrates data across different systems, including child welfare, mental health, drug and alcohol, juvenile justice, and criminal justice. Although involvement in these systems constitutes a limited set of experience and outcome measures, these measures do provide an opportunity to begin examining the hypotheses and comparing different types of out-of-home placement.

A. *Descriptives*

The data set consists of 42,735 children from 23,754 families. Of these children, 50.1% were male and 48.2% were female, with 1.7% missing data on gender. As to race, 44.2% of the children were black, 42.7% were white, 5.2% were biracial, and 7.9% were “other” or had missing race data. The project had data for the children through June, 2008 when the mean age of the children was 18.3 years ($SD = 2.78$).

Total Project Dataset

Participants: All children born between 1985 and 1994 who had any involvement with the Allegheny County public child welfare system

Total population: 42,735 children from 23,754 families

Gender:

Male	50.1%
Female	48.2
Missing Data	1.7

Race:

Black	44.2%
White	42.7
Biracial	5.2
Other/missing	7.9

Age: Followed all participants through June, 2008 when the average age was 18.3 years

There were 9273 children who experienced an out-of-home placement of some type (e.g., group home, residential treatment facility, or foster care). Of these children, 7417 (80%) had experienced non-kin foster care or kinship foster care sometime during their involvement with the County Department of Human Services. Of the children who experienced some type of foster care, 4444 children experienced only a non-kin foster care placement and 2973 children experienced kinship care for some period of their placement spells. For purposes of the county dataset, kin includes non-genetically related individuals who had a relationship with the child prior to his or her placement (e.g., family-friends or neighbors). Of the children who experienced either non-kin or kinship foster care, 65.6% were black, 26.9% were white, 6.9% were biracial, and the remaining 0.6% were American Indian, Asian, Hispanic, or classified as "other." Significantly more females experienced kinship foster care than males (42.5% versus 37.7%, $p < .001$). In addition, significantly more black children experienced kinship foster care than white children (42.7% versus 36.9%, $p < .001$).

Placement Dataset

Participants: 7417 children placed in foster or kinship care at some point

Race:

Black	65.6%
White	26.9%
Biracial	6.9%
Other	.6%

Non-Kin Placement Group: 4444 children experienced only non-kin foster care placements

Kin Placement Group: 2973 children experienced kinship care sometime during placement spells

The project also separately examined 367 children included in the county data set who had experienced a kinship foster care placement arranged by the primary kinship care agency in the county. This agency

became the primary kin care provider in the late 1990s.⁸⁶ As to gender, 45.1% of these children were male and 54.9% were female. Of these children, 74% were black, 22.1% were white, and 3.8% were biracial. For 315 of these children, the county data set provided valid outcome data, and the kinship placement agency provided the type of kin relationship between a particular child and his or her foster parents. Using a child's longest kin placement for categorization purposes, 245 children were placed with second-degree kin (130 children with aunts and/or uncles, 86 with grandparents, and 29 with siblings), 30 were placed with third-degree kin, and 40 were placed with non-genetic "kin" (e.g., family-friends or familiar neighbors).

Kinship Care Agency Dataset

Participants:	367 children who experienced kinship foster care placement arranged by the primary kinship care agency	
Gender:	Male	45.1%
	Female	54.9
Race:	Black	74.0%
	White	22.1
	Biracial	3.8
Type of kin foster parent:		
Second-degree kin	245	
	Aunts/Uncles	130
	Grandparents	86
	Siblings	29
Third-degree kin	30	
Non-genetic kin	40	
Missing data on type of kin	52	

⁸⁶ See OFFICE OF CHILDREN, YOUTH & FAMILIES, ALLEGHENY COUNTY DEP'T OF HUMAN SERVS., OVERVIEW OF KEY CYF PHILOSOPHIES, PRACTICES AND PROCEDURES 4 (2009), <http://www.alleghenycounty.us/dhs/cyf.aspx> (last visited Nov. 12, 2009).

B. Involvement in Other Systems and Placement Experiences

This article uses four primary measures of behavioral outcomes: (1) whether a child exhibited mental health problems as evidenced by the receipt of mental health services following the initial relevant placement (i.e., kinship or non-kin foster care); (2) whether a child engaged in substance abuse as evidenced by the receipt of drug and alcohol treatment services following the initial relevant placement; (3) whether a child participated in delinquent acts as evidenced by detention in a facility for juvenile offenders following the initial relevant placement; and (4) whether as a young adult, an individual committed criminal acts as evidenced by incarceration in the county jail. These outcome variables were dichotomized as yes or no for each individual participant. In addition to these primary outcome measures, this article notes and compares several placement experience factors that may impact child and adult outcomes: (1) age at out-of-home placement; (2) length of time spent in out-of-home placement; (3) number of different out-of-home placements; and (4) experience in congregate care (group home or residential facility).

Of the entire project data set, 32.5% of participants received mental health services, 8.8% received drug and alcohol treatment services, 8.4% experienced juvenile detention, and 4.7% experienced county jail. Of the 7417 individuals who experienced foster care or kinship foster care at some point, 52% received mental health services during their lifetimes, 14.6% received drug and alcohol treatment services, 15% experienced a placement in the juvenile justice system, and 8.9% spent time in the county jail. For these youths, the average age at out-of-home placement was 6.85 years old, and they spent 2.83 years on average in placement (median = 2.07 years). They had an average of 4.63 different out-of-home placements. Twenty-seven percent of the youths spent time in a group home or residential placement. Of the 315 individuals who were placed with an identified type of kin member, 72.7% received mental health services at some point during their lives, 23.8% received drug and alcohol treatment services at some point, 15.2% experienced juvenile detention, and 3.5% experienced county jail.

Outcome Measures			
	Total Dataset (N = 42,735)	Foster/Kinship Placement Dataset (N = 7417)	Kinship Agency Dataset (N = 367)
Mental Health Services	32.5%	52.0%	72.7%
Drug and Alcohol Treatment Services	8.8	14.6	23.8
Juvenile Detention	8.4	15.0	15.2
County Jail	4.7	8.9	3.5

C. Data Analysis

Four sets of analyses were conducted. First, for the comparison of children who were in only non-kin foster placements with children who were ever in kinship placements, two-way chi-square analysis⁸⁷ was performed on each of the other system involvement measures (mental health services following initial relevant placement, drug and alcohol treatment services following initial relevant placement, juvenile detention following initial relevant placement, and county jail) and on whether a youth had spent time in congregate care (group home or residential facility). Analysis of variance (ANOVA) was used to examine differences in number of placements, age at placements, and years in out-of-home placement.⁸⁸

Second, standard logistic regressions were performed separately on juvenile justice and county jail involvement using Generalized Estimating Equation (GEE).⁸⁹ The purpose of these analyses was to examine whether differences existed in likelihood of justice system involvement accounting

⁸⁷ See BRUCE FREY, STATISTICS HACKS: TIPS & TOOLS FOR MEASURING THE WORLD AND BEATING THE ODDS 66 (Brian Sawyer ed., 2006) (“[T]wo-way chi-squares analyze the relationship between two categorical variables. The process is the same: compare the expected frequencies with actual frequencies for each category or combination of categories.”).

⁸⁸ See *id.* at 37 (“[E]xamples of statistical procedures that measure relationships include t tests and analysis of variance, a procedure for comparing more than two groups at one time.”).

⁸⁹ GEE is a marginal model where regression estimates are computed and averaged across subjects, adjusting for lack of independence of observations. See K. Y. Liang & S. L. Zeger, *Longitudinal Data Analysis Using Generalized Linear Models*, 73 BIOMETRIKA 13 (1986) (introducing GEE as a higher-level method of analyzing data).

for sex (male or female), race (white or black), age (years), mental health services (prior to justice system involvement), drug and alcohol treatment services (prior to justice system involvement), number of placements (total number prior to justice system involvement), length of time out of home (total years in placement), and age when case was closed (under ten, ten to fourteen years-old, fourteen and older). These analyses were limited to black children and white children who had experienced a foster care placement of some type because of the small number of cases of youth of other races or ethnicities and the goal of examining difference in kin compared to non-kin foster home placements.

Third, as to placement stability, an independent-samples *t*-test⁹⁰ was performed for a comparison of the number of placements for children who entered a kinship foster care placement within three months of initial placement (815 participants) with the number of placements for all other children who experienced a non-kin or kinship foster care placement (6602 participants). Fourth, for the comparison among children who were in different types of kinship foster placements, two-way chi-square analysis was performed on each primary outcome measure (mental health services following primary kinship placement, drug and alcohol treatment services following primary kinship placement, juvenile detention following primary kinship placement, and county jail) by kin relationship for each child's longest kin placement (aunt and/or uncle, grandparent, sibling, third-degree kin, non-genetic kin).

III. RESULTS

A. Bivariate Analysis of System Involvement by Type of Placement (Kin or Non-Kin)

The comparison of children who were ever in a kinship placement (2973) with those who were in only non-kin foster care placements (4444) through two-way chi-square analysis revealed that 32% of children ever in kinship care received mental health services following their initial kinship placement, whereas 37.1% of children in only non-kin foster care received mental health services following the initial non-kin foster care placement. This difference was significant ($p < .01$). The children who experienced kinship care received significantly more drug and alcohol treatment

⁹⁰ See FREY, *supra* note 87, at 29 (“A *t* test compares the mean performance of two sample groups of scores to see whether there is a significant difference [S]tatistical significance means that the difference between scores in the two populations represented by the two sample groups is probably greater than zero.”).

services, with 14.4% receiving such services following the initial relevant placement compared to 9.8% of non-kin foster care children ($p < .01$). Differences in justice system involvement were not significant, however. Overall, a slightly higher percentage of kinship care children experienced juvenile detention following the initial relevant placement (13% as compared to 11.8%), but kinship care children had shorter stays in juvenile detention, spending an average of 199 days in detention compared to an average of 226 days in detention for children only in non-kin foster care. As for incarceration in the county jail, 9.2% of the kinship care group had experienced jail, while 8.4% of the non-kin foster care group had this experience.

Placement Dataset			
Outcomes Following Initial Relevant Placement			
(Non-kin foster home or kin foster home)			
Outcome Measure	Kin Foster Home Group (N = 2973)	Non-Kin Foster Home Only Group (N = 4444)	Significance Measure
Mental Health	32.0%	37.1%	($p < .01$)
Drug and Alcohol	14.4	9.8	($p < .01$)
Juvenile Detention	13.0* *Ave. Stay–199 days	11.8* *226 days	ns ns
County Jail	9.2	8.4	Ns

Interestingly, the youths in these two groups differed on a variety of measures of placement experience. Youths in the kin care group had more placements (5.82 compared to 3.84, $p < .01$). This finding differs from previous research and raises some concern given the relationship of placement instability and a variety of negative outcomes such as a higher likelihood of juvenile justice involvement. At the same time, youths in the kin care group first entered placement at substantially older ages (8.72 compared to 5.59 years old, $p < .01$), spent more time in out-of-home placement (3.41 compared to 2.45 years, $p < .01$), and had a higher number of spells in out-of-home placement (1.59 compared to 1.42, $p < .01$). Further, a higher percentage of these youths spent time in a congregate care placement (35% compared to 21%, $p < .01$) or had run away from placement at some point (18% compared to 8%, $p < .01$). Finally, these

youths were more likely to be from families involved in the child welfare system after the youth turned fourteen years-old (71% compared to 53%, $p < .01$). Thus, it is apparent that youths in kin care placements differed in important ways from those in only non-kin foster placements on a number of placement experiences. This is particularly important given that many of these differences are associated with a higher likelihood of juvenile justice system involvement.

Because participants on average experienced a relatively high number of placements, the project conducted a comparison of children who had experienced relatively stable placements. The project examined the children who had remained in at least one kinship placement for more than eighteen months (930) and compared their outcome measures to those for children who had remained in at least one non-kin foster placement for more than eighteen months (2097). The comparison of these two stable placement groups through two-way chi-square analysis revealed that 40.1% of stable kinship care children received mental health services following their stable kinship placements while 43.2% of stable non-kin foster care children received these services following their stable placements. The stable kinship placement children received more drug and alcohol treatment services, with 12.7% receiving these services following their stable placements compared to 9.7% for the stable non-kin foster care children. This difference was statistically significant ($p < .05$). In addition, a higher percentage of stable kinship care children experienced juvenile detention following their stable placements (11.5% as compared to 9.5%). Finally, 7.5% of the participants who had stable kinship placements and 6.7% of the participants who had stable non-kin foster care placements had experienced county jail.

Stable Placement Dataset (at least one placement > 18 mos.) Outcomes Following Stable Placement			
Outcome Measure	Kin Foster Home Group (N = 930)	Non-Kin Foster Home Only Group (N = 2097)	Significance Measure
Mental Health	40.1%	43.2%	ns
Drug and Alcohol	12.7	9.8	($p < .05$)
Juvenile Detention	11.5	9.5	ns
County Jail	7.5	6.7	ns

B. Regression Analysis

The regression model predicting juvenile justice placement indicated that there were no significant differences between kin and non-kin placements in the likelihood of placement in the juvenile justice system. As shown in the table, there are a number of control variables that predict placement in the juvenile justice system. Females were 25% as likely as males to experience a juvenile justice placement, and black youth were 2.3 times more likely than white youth. Youths receiving mental health services were 1.8 times more likely to have experienced a juvenile justice placement, and youths receiving services in the drug and alcohol system were 65% as likely as those not receiving services to have experienced a juvenile justice placement. Youths with more placements were more likely to be involved in juvenile justice, and those whose families were involved when they were fourteen or older were also more likely to experience a juvenile justice placement.

Regression Analysis Predicting Juvenile Justice Placement			
Parameter	<i>B</i>	<i>Std. Error</i>	<i>Exp(b)</i>
African American	0.85	0.11	2.33***
Female	-1.41	0.09	0.25***
MH services	0.59	0.09	1.80***
DA services	-0.44	0.13	0.65**
Age	0.12	0.02	1.12***
Years in placement	-0.12	0.02	0.89***
Number of placements	0.14	0.01	1.15***
Closed before age 10	-1.14	0.16	0.32***
Closed between 10 and 14	-0.85	0.12	0.43***
Non-kin foster care	0.16	0.09	1.17
** $p < .01$; *** $p < .001$			

Similarly, there was no significant difference between kin and non-kin placements and involvement in the county jail. As the table shows, many of the same control variables predicted jail involvement. Key differences were that receipt of drug and alcohol services is associated with a higher

likelihood of jail involvement, and number of placements was not significant in this model. Importantly, youths who had experienced a juvenile justice placement were almost six times more likely to have jail involvement.

Regression Analysis Predicting County Jail Involvement			
Parameter	<i>B</i>	<i>Std. Error</i>	<i>Exp(b)</i>
African American	0.99	0.14	2.69***
Female	-1.62	0.13	0.20***
MH services	0.18	0.12	1.20
DA services	0.85	0.15	2.34***
Age	0.60	0.03	1.83***
Years in placement	-0.06	0.02	0.94**
Number of placements	0.01	0.02	1.01
Closed before age ten	-0.80	0.23	0.45***
Closed between ten and fourteen	-0.94	0.17	0.39***
Non-kin foster care	-0.09	0.12	0.91
Juvenile justice	1.79	0.12	5.97***
** $p < .01$; *** $p < .001$			

C. Number of Placements

The independent-samples *t*-test on the number of placements for children who were placed with kin within three months of their initial placement revealed that these children experienced an average of 4.65 placements. In comparison, the average number of placements for children who were not placed with kin within the first three months was 3.85. This difference is statistically significant ($p < .001$). Thus, children who were placed fairly quickly in kinship foster care homes experienced less stable placements than children never placed in kinship care or placed into kinship foster care after three months. This finding is not consistent with

prior research comparing kinship foster care placements to non-kin foster care placements.⁹¹

D. Type of Kin

The comparison of children by type of kin placement through two-way chi-square analysis revealed no statistically significant differences as to mental health services following primary kinship placement (22.5% overall), drug and alcohol treatment services following primary kinship placement (14.4% overall), juvenile detention following primary kinship placement (9.5% overall), and county jail (3.2% overall). Placement with an aunt and/or uncle, grandparent, sibling, third-degree kin member, or non-genetic kin member did not correlate with any of the outcome measures for the children in kin foster care placements. In addition, there were no statistically significant differences in the average number of kin placements among types of kin placement, with an average of two kinship placements per child overall. A separate comparison revealed that black children had a significantly higher average number of kinship placements than white children. Adjusting for sex, age, and degree of relatedness to kin foster parent, black children had an average of 1.96 kinship placements while white children had an average of 1.38 kinship placements ($p < .05$).

IV. DISCUSSION

This project used a large administrative data set from an urban county human services system to compare children who had ever lived in kinship foster care with children who had lived in only non-kin foster care. The project compared children on four primary outcome measures. This comparison constitutes an initial test of the project's first hypothesis—that children are likely to experience better treatment and outcomes in kinship foster care as opposed to non-kin foster care.

The project's findings fail to fully support the first hypothesis. Although a smaller percentage of children who had ever been placed in kinship foster care received mental health services following their initial kinship placement, a larger percentage of kinship care children received drug and alcohol treatment services following their initial kinship placement. The differences between the two groups concerning the outcomes of juvenile detention and county jail were not statistically significant. The largely equivalent outcomes for kinship care children and

⁹¹ See Winokur et al., *supra* note 42, at 344–45; Chamberlain et al., *supra* note 40, at 415; Cuddeback, *supra* note 37, at 629.

non-kin care children persist in a comparison of children who had experienced stable kinship placements (at least one placement of eighteen months or longer) with those who had experienced stable non-kin foster care placements (at least one placement of eighteen months or longer).

These findings do not necessarily refute the project's first hypothesis. Because of the limitations of the administrative data set, the project could not control for the effects of foster parent socio-economic status (SES), foster parent health, neighborhood and community conditions, level of public financial support for the foster family, and level of public monitoring of the foster family. Prior research indicates that kin foster parents, in comparison to non-kin foster parents, have lower SES, are less healthy, live in poorer neighborhoods and communities, receive less public financial support, and are monitored less by public actors.⁹² Because the effect size for the differences between the two groups is low, it is reasonable to infer that the introduction of these control variables would reveal that the children who experienced kinship care fared as well as, if not better than, the children who experienced only non-kin foster care. This inference is supported by a consideration of the differences between the groups on placement experience factors. Despite placement experiences that indicate children in the kinship care group were at higher risk of justice system involvement, the kinship care children did not realize significantly worse outcomes in this area. Such findings would be consistent with prior comparative research in this area.⁹³

The findings from this project's logistic regression analysis for the outcomes of juvenile detention and county jail are consistent with the bivariate analyses. There was no significant prediction of either juvenile detention or county jail by type of foster care placement experience while controlling for sex, race, mental health services, drug and alcohol treatment services, age at family involvement in the child welfare system, time spent in out-of-home placement, and number of placements. However, it should be noted again that the project was not able to control for foster parent SES, foster parent health, neighborhood and community conditions, public

⁹² See Geen, *supra* note 1, at 137; Jennifer Ehrle & Rob Geen, *Kin and Non-Kin Foster Care—Findings from a National Survey*, 24 CHILD. & YOUTH SERVICES REV. 15, 19–20 (2002); Timothy J. Gebel, *Kinship Care and Non-Relative Family Foster Care: A Comparison of Caregiver Attributes and Attitudes*, 75 CHILD WELFARE 5, 10–13 (1996).

⁹³ See Winokur et al., *supra* note 42, at 344–45; Chamberlain et al., *supra* note 40, at 415; Cuddeback, *supra* note 37, at 629.

financial support for the foster family, and level of public monitoring of the foster family.

The project's comparison of the number of placements for children placed in kinship care within the first three months with the number of placements for children placed in only non-kin foster care or in kinship care after three months indicates that kinship placements are less stable than non-kin placements. This finding is inconsistent with prior comparative research on kinship placements.⁹⁴ This is especially true in light of the project's finding that many children experienced numerous moves within kinship care itself. In other words, children were moving from kin home to kin home at a fairly high rate, with black children experiencing such moves at a higher rate than white children. These findings may indicate problems with the implementation of kinship care in the project county. Prior research indicates that placement stability correlates with positive outcomes.⁹⁵ Thus, the lack of placement stability in the project county could have significant negative consequences. This lack of stability may account, in part, for the failure of kinship care children in the project county to achieve better outcomes than non-kin foster care children.

The project used a small data set from the primary kinship care agency in the project county to compare outcome measures among placements with different types of kin. This comparison constitutes an initial test of the project's second hypothesis—children in kinship foster care are likely to experience better treatment and outcomes when placed with some types of kin rather than others.

The project's findings fail to support the second hypothesis. The comparison of outcome measures for placements among different types of kin (i.e., aunts and/or uncles, grandparents, siblings, third-degree kin, and non-genetic kin) reveals no significant differences in the percentage of children who had received mental health services or drug and alcohol treatment services following primary kinship placement. The comparison also reveals no significant differences in the percentage of children who had experienced juvenile detention or county jail following primary

⁹⁴ See Winokur et al., *supra* note 42, at 344–45; Chamberlain et al., *supra* note 40, at 415; Cuddeback, *supra* note 37, at 629.

⁹⁵ See, e.g., Chamberlain et al., *supra* note 40, at 410–11; Rubin et al., *supra* note 46, at 554; David M. Rubin et al., *The Impact of Placement Stability on Behavioral Well-being for Children in Foster Care*, 119 PEDIATRICS 336, 339–41 (2007).

kinship placement. In addition, the comparison reveals no differences as to the stability of placements.

It is important to note that the absence of significant differences in outcomes holds even for the comparison with non-genetic kin placements (e.g., family-friends or neighbors). This may indicate that any adult who has an established social relationship with a child is likely to respond with a similar level of parental investment once the child is in need of a new home; thus, accounting for the similarity in outcomes.⁹⁶ Or it is possible that the limited outcome measures available for use in this initial study fail to reflect variance in levels of parental investment, with direct measures of parental investment and correlated outcome measures needed to test the project's second hypothesis.⁹⁷ It is also possible that the sample population was too small to reveal differences in outcomes by type of kin placement.

In summary, the findings from this initial research project fail to support either of the hypotheses concerning kinship foster care formulated based on evolutionary concepts and behavioral biology research. The results do, however, provide guidance for further research in this area. They indicate that researchers must collect data in the field, rather than rely on large administrative data sets, to test the hypotheses. The data collection protocol must include relevant control variables that are lacking in most large administrative data sets—e.g., physical and mental health assessments of children at the time of placement into foster care, SES of foster families, neighborhood and community conditions, level of public financial support for foster families, and level of public monitoring of foster families. Researchers should also include direct measures of parental investment because the hypotheses conceive level of parental

⁹⁶ See Kyle Gibson, *Differential Parental Investment in Families with Both Adapted and Genetic Children*, 30 *EVOLUTION & HUM. BEHAV.* 184, 187 (2009) (supporting the possibility that any adult with an established social relationship with a child will match or exceed the level of parental investment exhibited by genetic parents); Laura Hamilton, Simon Cheng & Brian Powell, *Adoptive Parents, Adaptive Parents: Evaluating the Importance of Biological Ties for Parental Investment*, 72 *AM. SOC. REV.* 95, 105 (2007).

⁹⁷ See Gibson, *supra* note 96, at 186–87 (providing an example of appropriate parental investment and related outcome measures using detailed investment measures in four areas—health, education, personal time, and social time); Hamilton, Cheng & Powell, *supra* note 96, at 102–04 (using detailed investment measures in four areas: economic, cultural, interactional, and social capital); Anne Case, I-Fen Lin & Sara McLanahan, *Educational Attainment of Siblings in Stepfamilies*, 22 *EVOLUTION & HUMAN BEHAV.* 269, 270–71 (2001) (focusing on investment and attainment in the area of education, but also discussing studies on investment measures such as food and health).

investment as a mediator for child and adult outcomes. In addition, researchers must include more numerous and broader measures of child outcomes, especially those that are likely to correlate with relative levels of parental investment—e.g., level of educational attainment, nutrition and weight gain, employment, and physical and mental health.

V. CONCLUSION

Evolutionary concepts present child welfare researchers with an opportunity to develop a theoretical framework that is useful in guiding research concerning kinship foster care. Behavioral biology research related to relevant evolutionary concepts supports the development of this theoretical framework and maps a course for research that examines kinship foster care.⁹⁸ More specifically, consideration of evolutionary concepts and the related research warrants a comparison of kinship foster care placements with non-kin foster care placements.⁹⁹ The concepts and research also call for a comparison of different types of kinship placements.¹⁰⁰

Child welfare decision makers, such as public agency officials and juvenile court judges, may be tempted to immediately use placement decision criteria derived from evolutionary theory. As this project illustrates, doing so would be a mistake. The lack of empirical support for either of the project's hypotheses, although based only on the examination of a large and limited administrative data set, cautions against immediate application of theoretical constructs to decisions in the field.

This caution has not been heeded in regard to the project's first hypothesis—child welfare law, policy, and practice have fully embraced a preference for kinship placements.¹⁰¹ Fortunately, the research to date indicates that this approach is not harming children on average, and in fact, is likely to benefit many children if public agencies provide appropriate services to kin foster parents.¹⁰²

In regard to the project's second hypothesis, the use of theory-based criteria to choose among potential kin foster parents raises serious policy and legal issues. Using a decision construct (i.e., a rank listing of kin)

⁹⁸ See discussion *supra* Part I (discussing how behavioral biology research indicates that kinship foster care placements, due to genetic ties and kinship altruism, will yield higher levels of parental investment than non-kinship foster care placements).

⁹⁹ See Herring, *supra* note 12, at 496–97, 502–10.

¹⁰⁰ See *id.* at 496–97, 500.

¹⁰¹ See *supra* notes 5–11 and accompanying text.

¹⁰² See, e.g., Cuddeback, *supra* note 37, at 633.

based on concepts of degree of relatedness, paternity certainty, and sex effects to choose among kin entails the classification of persons based on lineage and gender, and thus, raises serious equal protection issues.¹⁰³ State actors such as agency caseworkers and juvenile court judges would need strong empirical evidence of beneficial outcomes for affected children to support the use of such classifications. In legal terms, the classifications must, at the least, be substantially related to the achievement of an important governmental interest.¹⁰⁴ This relatively high standard of scrutiny requires more than a rational theoretical basis. It requires empirical support.

The applicable legal standard likely provides an appropriately rigorous test in this area. Placement decision criteria should be based on thorough empirical research, something that has been sorely lacking in this area to the detriment of children in foster care. To make an actual difference in foster care conditions, the child welfare system should strive to develop empirically-based decision criteria. That is, the goal this project pursues. Accordingly, this project is simply the beginning of a larger, long-term inquiry aimed at producing new knowledge that will guide key decision makers and benefit children who enter foster care.

¹⁰³ See, e.g., *Caban v. Mohammed*, 441 U.S. 380, 389, 394 (1979) (“We conclude that this undifferentiated distinction between unwed mothers and unwed fathers, applicable in all circumstances where adoption of a child of theirs is at issue, does not bear a substantial relationship to the State’s asserted interests.”).

¹⁰⁴ See, e.g., *Craig v. Boren*, 429 U.S. 190, 197 (1976); *United States v. Virginia*, 518 U.S. 515, 524 (1996) (“To succeed, the defender of the challenged action must show ‘at least that the classification serves important governmental objectives and that the discriminatory means employed are substantially related to the achievement of those objectives.’”) (internal citations omitted).