

Chapter 4

Evolutionary Perspectives on Child Welfare Law

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Introduction

Children confront a risk of harm at the hands of their adult caretakers. The potential harm could manifest in three primary forms of violence: physical abuse; neglect or emotional abuse that threatens serious physical harm; and sexual abuse.

Public child welfare systems and child welfare laws are designed to address the risk of violence faced by children. Although preventive approaches exist, the primary legal approach is reactive. The law presumes that a child's adult caretakers are at least minimally adequate parents. Thus, child welfare laws allow the state to intervene to protect children only after there is reason to believe that a particular child has suffered some form of harm and is likely to suffer additional harm.¹ In addition, once a child is victimized, public child welfare systems seek to secure the child's well-being. The system must construct the child's living situation in a way that protects the child from further violence and produces acceptable outcomes in terms of the child's development. Each of these two facets of the child welfare endeavor places a premium on the assessment and prediction of human behavior.

This chapter describes how evolutionary theory and behavioral biology research provide insights that are useful in examining, critiquing, and reconstructing child welfare laws, policies, and practices. Together, these concepts and the related research have produced knowledge of behavioral tendencies. Several of these tendencies have direct implications for the prediction of violence against children and for the effort to secure child well-being.

This chapter provides two primary examples that illustrate the usefulness of evolutionary theory and research in this area. Each example provides a description of a particular child welfare problem confronted in the field and of the current systemic

¹ See generally Santosky v. Kramer, 455 U.S. 745 (1982); Smith v. Organization of Foster Families, 431 U.S. 816 (1977).

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T. K. Shackelford, R. D. Hansen (eds.), *The Evolution of Violence*,
Evolutionary Psychology, DOI 10.1007/978-1-4614-9314-3_4,
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approach to the problem. This chapter then explains the relevant evolutionary concepts and behavioral research, discusses the relevant empirical research, and delineates the implications for child welfare law, policy, and practice. Finally, this chapter explores additional areas worthy of inquiry based on the relevant evolutionary concepts and emerging research.

Risk Assessment: The Prediction of Violence Against Children

Public child welfare agencies have adopted various risk assessment tools to predict the risk of child maltreatment in a particular family situation. These tools usually take the form of a checklist that an agency worker can complete in investigating alleged maltreatment. There are two basic types of checklists. The first includes items that practitioners deem relevant based on their experiences in the field and that often call for subjective assessments (e.g., whether past incidents of abuse were “isolated” or “intermittent”). These consensus-based checklists are not supported by rigorous empirical studies (Austin et al. 2005; Baird and Wagner 2000). The second type includes items that researchers have found to be correlated with future child maltreatment (e.g., whether there was a prior injury to a child from abuse or neglect). Most child welfare officials and scholars consider these actuarial-based checklists to be superior (Austin et al. 2005; Gambrill and Shlonsky 2000). However, the development of these checklists has proven difficult and expensive (Knoke and Trocme 2005; Rycus and Hughes 2003).

Those attempting to develop research-based risk assessment tools face at least one major difficulty—they lack a conceptual framework that allows them to identify factors that are worthy of examination (Knoke and Trocme 2005). Much of the current research is conducted based on the fortuity of a data element being included in an administrative data set constructed for administrative purposes or in a longitudinal study data set built on an unfocused or incoherent theory of potential risk factors. The result is a broad, largely unguided search for correlations within a massive jumble of complex data. To date, this process has resulted in weak risk assessment tools that fail to predict maltreatment accurately (Knoke and Trocme 2005). Evolutionary theory and behavioral research have the potential to address this difficulty and contribute to the construction of valid and reliable risk assessment tools.

Example #1—Children Living with Unrelated Adults

Evolutionary theory indicates that a child residing with a genetically unrelated adult faces an increased likelihood of child maltreatment. This situation is common for children in our society (Pew Research Center 2011), and a significant portion of children who enter the child welfare system reside with an unrelated adult such as

a stepparent, a term that includes a genetic mother's boyfriend. Child welfare laws do not have specific provisions that address the situation of a child living with an unrelated adult. Child welfare agency policies and risk assessment tools fail to fully consider this situation. Although caseworkers often record data on each member of a child's household, their use of such data is largely unclear. In practice, judges tend to focus on the genetic parent or parents without much attention to other adults unless there are indications of domestic violence within the household. Moreover, although agency caseworkers may recognize the risk posed by an unrelated adult, they lack formal administrative or legal channels to address this potential risk.

The relevant evolutionary concepts begin with the widely accepted premise that there is selection for altruism toward offspring (Hamilton 1964). An individual who possesses this trait reaps reproductive benefits as long as the reproductive costs incurred in assisting the offspring are less than the reproductive benefits realized through the offspring (Hamilton 1964). For this calculation, reproductive costs include the reduction in parental resources available to invest in other offspring, including current and future offspring. Reproductive benefits consist of the reproductive success of the recipient of parental solicitude, discounted by the degree of relatedness. The degree of relatedness between parent and offspring is 50%, meaning that there is a 50% probability that the offspring and parent share a specific gene (Hamilton 1964). Thus, the reproductive benefits must be more than twice the reproductive costs for a trait of parental solicitude to be favored by natural selection. Because this condition was fulfilled in evolutionary environments, offspring altruism has evolved in humans (Trivers 1985).

A logical corollary to these concepts is that an individual gains nothing in terms of reproductive benefits by exhibiting altruism toward children who are not his or her genetic offspring. A reproductive cost incurred for the benefit of a child who is not genetically related to the altruist would constitute a net loss in terms of the altruist's reproductive success. Thus, a behavioral tendency for altruism toward all children has not evolved in humans (Jones 1997).

This distinction between genetic offspring and other children underlies an aspect of discriminative parental solicitude, one which predicts that an individual will invest much less in genetically unrelated children than in genetic offspring. Although an individual may invest in an unrelated child to achieve future reproductive benefits through the child's genetic parent (i.e., potential or current mate), it is likely that this investment will be less than that made in one's genetic child (Daly and Wilson 1998). This general prediction leads to several more specific predictions. For example, in his pathbreaking work concerning evolutionary analysis in law, Owen Jones addresses infanticide, discussing the predictions of discriminative parental solicitude theory. He notes that evolved behavioral predispositions may contribute to an unrelated adult causing the death of an infant, stating that

An infant that must rely on the resources of an unrelated adult is somewhat more likely to die of neglect or to be killed by that adult, simply because, on average, the infant will not evoke the same solicitousness as would an offspring. Since *not* caring for infants is the default (or initial) evolved predisposition (in the absence of relatedness cues), the adult will on average be less tolerant, less willing to provide, and less protective than would the infant's own parents. (Jones 1997 at 1177)

Thus, evolutionary theory predicts that, at the extreme margins of adult caretaking behavior (i.e., infanticide), we will find that the percentage of unrelated adult caretakers who engage in violence is greater than the percentage of genetic parents who engage in violence.

Martin Daly and Margo Wilson had previously used this theoretical framework to formulate and test the hypothesis that the risk of maltreatment is higher within families that include a stepparent, with stepparent defined as “the coresiding partner of a (presumed) genetic parent, regardless of marital status” (Daly and Wilson 1988). Their research confirmed the hypothesis. In studies of fatal beatings of small children (newborn to 2 years), data from Canada revealed that the rate of child homicide for stepfathers was more than 120-fold greater than the rate for putative genetic fathers (Daly and Wilson 2001). Data from the USA indicated that newborn children up to 2 years of age face about a 100 times greater risk of being killed by a stepparent (Wilson et al. 1980). In terms of nonfatal abuse, they found that stepparents physically and sexually abuse children at a much higher rate than genetic parents (Daly and Wilson 1985; Wilson et al. 1980). Their research also indicated that rates of physical abuse by stepmothers and stepfathers are roughly equivalent, with rates for both far in excess of those for genetic parent households (Daly and Wilson 1981).

Subsequent studies support these findings. One study examined all fatal beatings in Missouri from 1992 through 1999 in which a child less than 5 years of age died as the result of injuries inflicted by a parent or caregiver. The researchers found that a child living in a household with an unrelated adult faced a 50 times greater risk of death than a child living only with a genetic parent (Schnitzer and Ewigman 2005).

Another study used a national database of criminal homicides maintained by the United States Federal Bureau of Investigation to examine homicides of children less than 5 years of age by parents or stepparents. Even though this database included only stepparents who were legally married to a genetic parent, the rate of child homicide for stepfathers was approximately 8 times greater than for genetic fathers. The rate for stepmothers was almost 3 times greater than that for genetic mothers (Weekes-Shackelford and Shackelford 2004).

A noteworthy study examined the characteristics of child maltreatment perpetrators in 126 fatality cases and compared them to a matched set of child maltreatment perpetrators in nonfatal cases. The researchers found that being a genetically unrelated caregiver is the strongest predictor of fatal child maltreatment. Perpetrators who were genetically unrelated to the child victim were almost 17 times more likely to commit a fatal assault compared to genetic parents (Yampolskaya et al. 2009).

Researchers have also examined the method used by the parent to kill the child. Stepfathers tend to beat and bludgeon the child victim, whereas genetic fathers tend to use relatively quick and painless methods, often followed by suicide (Daly and Wilson 1994; Weekes-Shackelford and Shackelford 2004). This difference may indicate that stepfathers have a higher level of animosity and resentment toward the child victims than genetic fathers. Another study indicated that this difference in method was even more pronounced for stepmothers in comparison to genetic mothers and that stepchildren were even more at risk if their stepparent had genetic offspring in the household (Harris et al. 2007).

One study examined unintentional fatalities of preschool-aged children in Australia, finding the risk of fatal injury was 2–15 times greater for stepchildren than for children from intact genetic families. The risk was greatest for drowning deaths, a type of unintentional death that may indicate a failure of a parent to supervise the child. The risk for children from single genetic parent households was not higher than that for intact genetic families, indicating that the factor that increases the risk of unintentional child fatality is the addition of an unrelated adult (Tooley et al. 2006).

Subsequent studies also support Daly and Wilson's findings related to nonfatal abuse. In one study of fatal abuse, the researchers' findings indicated that children killed by stepparents are more frequently subject to repeated abuse and neglect prior to their death than children killed by their genetic parents. Thus, the rate of maltreatment was higher in households that included an unrelated adult (Harris et al. 2007).

Several studies have examined nonfatal abuse directly. One study of male perpetrators of physical abuse in Bogota, Colombia found that stepfather status was associated with abuse (Klevens 2000). Another study examined all cases of child maltreatment in the Netherlands in 2005, finding that stepparent families evidenced elevated risks for child maltreatment (van IJzendoorn et al. 2009). Researchers in Brazil have studied whether the presence of a stepfather constituted a risk factor for physical abuse of children as reported by their mothers. Children with stepfathers had almost 3 times the risk for abuse as children in two genetic parent households (Alexandre et al. 2010). Interestingly, the mothers in many cases indicated that they were the abuser, not the stepfather. The researchers concluded that "Brazilian mothers professed to abuse their own children at substantially higher rates when their male partners were stepfathers to the focal child as compared to genetic fathers" (p. 959). These studies indicate that children face a heightened risk of violence in households that include stepparents.

This conclusion is further supported by studies that indicate discrimination against stepchildren that falls short of physical abuse. Several studies reveal that stepchildren in the USA receive less support than genetic children for higher education, regular medical care, and food, and that both parents and children express the view that stepparents' level of parental investment is lower than that of genetic parents (Case and Paxson 2001; Case et al. 2000; Zvoch 1999). Stepparents appear to manifest lower parental emotional investment, higher parental resentment, and higher parental jealousy, indicating the presence of stepparental antagonism (O'Connor and Boag 2010; Anderson et al. 1999).

In summary, research findings support the hypothesis that children living in households with unrelated adults face a higher risk of maltreatment. Although many genetically unrelated adults provide at least adequate care and invest heavily in the well-being of the children with whom they reside, the risk of violence is higher for children in stepparent households. Thus, one would reasonably be more concerned for children living with an unrelated adult than children living solely with a genetic parent or parents.

Child welfare law, policy, and practice is, in large part, a matter of prediction. For example, in determining whether a child can safely remain in a particular family

home or must be removed to foster care, a caseworker, his or her supervisors, and eventually a judge must predict behavior within the family home. This is the essence of risk assessment, and the findings on the risk presented by stepparent care can contribute in this area.

Owen Jones has provided a long list of specific possibilities for the use of this new knowledge, noting that the implications extend throughout the child welfare process (Jones 1997). To begin, child welfare system personnel could train mandatory child abuse reporters to record the presence of an unrelated adult in the child's household. Child welfare intake workers could incorporate this information into their decision-making process, with households that include an unrelated adult more likely to be investigated further when all else is equal. During an investigation, caseworkers could use an actuarial risk assessment tool that properly scores the risk presented by an unrelated adult. Relatedly, child welfare agency administrators could work to develop and implement such a risk assessment tool, training caseworkers on how to score research-based risk factors (Yampolskaya 2009).

To be more concrete, caseworkers could consider the presence of an unrelated adult in making placement decisions for a specific child. In the early stages of a case, caseworkers are often called on to make relatively swift decisions on whether a child should remain in his or her current home or be placed in another home. In cases in which the presence of an unrelated adult presents a significant risk of harm to the child, a caseworker could request that the unrelated adult move out of the house. If the family refuses, the caseworker could offer the family in-home services that would allow the agency to monitor the home and the child so as to reduce the risk of harm to an acceptable level. If the family refuses such services, then the caseworker could seek a court order mandating such services or could seek court approval to place the child in a foster home.

If such a case proceeded to court, the judge could consider this risk factor in making decisions on the four essential legal issues. First, the judge must decide if the child welfare agency has made reasonable efforts to prevent removal of the child from the family home.² Thus, the judge could require the agency to work with the genetic parent to remove the unrelated adult rather than the child. Or the judge could mandate that the agency provide services that allow caseworkers to adequately monitor the household.

Second, if the judge finds that the agency has made reasonable efforts, he or she must determine whether removal of the child is warranted in light of the risks (Yampolskaya 2009). As the research indicates, the presence of an unrelated adult is relevant to this assessment.

Third, if placement is warranted, the judge must determine visitation. The judge may consider the presence of an unrelated adult in determining where visits should take place (e.g., the family home and the child welfare office), who should be allowed to participate (e.g., all members of the household or genetic relatives only), and whether the visits should be supervised by a third party (e.g., a neighbor or a child welfare agency worker).

² See Adoption Assistance and Child Welfare Act of 1980, Pub. L. 96-272.

Fourth, the judge must determine the services the agency will be required to provide to the family to achieve family reunification. The judge may want to consider services designed to educate genetic parents and nongenetic caretakers about the psychological dynamics and risks associated with an unrelated adult caring for a child. The judge may also want to order the agency to work carefully toward reunification and to monitor the situation closely (Yampolskaya 2009).

It is important to make clear that the research findings do not mandate these legal, policy, and practice measures. The research merely provides knowledge to lawmakers and policymakers for their consideration. It does not provide the answer as to what should be done with this knowledge. For example, policymakers may decide that the consideration of stepparent status as a risk factor stigmatizes that status to an unacceptable degree in a society such as ours in which stepparenthood has become prevalent. They may decide that the avoidance of some child maltreatment is not worth the cost of such stigmatization. This is a legitimate choice, but the important thing is that policymakers make this choice with a fuller realization of the potential consequences (Jones 1997).

The research to date also has implications for future research in this area. For example, researchers have tended to conduct bimodal comparisons between all genetic fathers and all other fathers (i.e., stepfathers). This latter group potentially includes many different types of “stepfathers” who warrant separate examination, such as stepfathers married to the child’s genetic mother, mother’s live-in boyfriend, adoptive fathers, foster fathers, not to mention more distant kin such as grandfathers and uncles (Herring 2009a). Well-designed studies may help reveal specific father-types that present relatively high risks of child maltreatment.

In addition, researchers could attempt to address broader questions that differentiate stepparent family situations. For example, researchers could address whether the risk of maltreatment is elevated in families with two nongenetic parents, such as adoptive parent families and foster parent families. Researchers could also examine gay and lesbian parent families (Adler-Baeder 2006).

Regardless of how the research in this area proceeds, the potential contribution of evolutionary theory to the construction of actuarial-based risk assessment tools extends beyond the relatively well-researched area of unrelated adult caretakers. One area of developing research illustrates this point.

This illustration of evolutionary theory’s potential to contribute in the area of risk assessment draws on the concepts of sexual selection and parental investment. Women select men as sexual partners based on numerous factors. Evolutionary theory posits that one factor relevant to a woman’s selection of a long-term mate is her conscious assessment of a man’s likely level of investment in children (Sugiyama 2005; Anderson et al. 1999). From this conceptual perspective, a man’s parental investment is, in part, a form of mating effort (Van Schaik and Paul 1997). One could predict that as long as this aspect of mating effort yields positive results in terms of a man’s relationship with a woman, it will evoke sustained paternal investment and better treatment of children. One could also predict that if the relationship is troubled or uncertain, it will yield worse treatment of children, including higher rates of maltreatment (Herring 2009a).

Research supports these hypotheses. Men in a relationship with the mother of their children report higher levels of parental investment than men who are not (Apicella and Marlowe 2004; Anderson et al. 1999). Observations of parent/child interactions indicate that there is a relationship between marital satisfaction and a man's treatment of, and engagement with, children (Hofferth and Anderson 2003; Geary 2000). Children of married parents consistently receive higher levels of male parental investment than children of unmarried parents (Hofferth and Anderson 2003).

The research also indicates that men's assessment of their mates' fidelity, a possible cue to both paternity and to the quality of the relationship, predicts male parental investment (Apicella and Marlowe 2004). One study examined the relationship between men's paternity confidence and their investment in children (Anderson et al. 2007). The researchers found that low confidence in paternity reduces paternal investment on two of three measures—the time men spend with a child in a group and involvement with the child's educational progress. They concluded that the results suggest that “paternity confidence plays an important role in influencing men's relationships with the women who bear their children and with the children themselves” (Anderson et al. 2007 at 9).

Based on these findings, a team of researchers hypothesized that the risk of a man's physical abuse of children will be heightened by cues of nonpaternity (Alexandre et al. 2011). The researchers used a man's failure to cohabit with the mother of his putative child at the time of conception as a cue of paternity uncertainty and an indicator of relationship quality. Based on interviews with mothers in Brazil, the researchers found that failure of parents to live together at conception quadrupled the risk of child physical abuse by fathers who subsequently coresided with the mother and child (Alexandre et al. 2011).

In another study, the researchers used a different measure of relationship quality—intimate partner violence during pregnancy—to determine if there was a link to subsequent child maltreatment by a man (Chan et al. 2012). Conducting a longitudinal follow-up study of Chinese women who had experienced intimate partner violence during pregnancy, the researchers found that such violence predicted subsequent physical abuse of children but not subsequent neglect of children. The odds of subsequent abuse were about twice as high as those for non-abused women (Chan et al. 2012).

In addressing the risk posed to children from poor relationships between a child's mother and her partner, legal scholars, lawmakers, and policymakers have focused primarily on the occurrence of domestic violence (*see, e.g.*, Weithorn 2001). Studies indicate that children face a heightened risk of maltreatment in households where domestic violence occurs (Lee et al. 2004; Rumm et al. 2000; Appel and Holden 1998). There is also support for the proposition that children are harmed by witnessing violence between their mother and her partner (Weithorn 2001). Thus, the legal and policy focus on this risk factor appears appropriate.

However, evolutionary theory and behavioral research indicate that this focus is too narrow. Any situation that indicates poor relationship quality between a mother and her male partner may present a heightened risk of child maltreatment. Thus, it

may be useful for lawmakers and policymakers to consider relationship quality as a factor in risk assessment. More research needs to be done in this area concerning indicators of paternity uncertainty and poor relationship quality, but such research could lead to the further development of actuarial-based risk assessment tools and the related legal and policy protocols.

Foster Care Placement Decisions: The Prediction of Parental Investment

State laws authorize public child welfare agencies, working under court supervision, to remove a child from parental custody if the child faces a substantial risk of maltreatment. Once public officials decide to remove a child from a family, they must place the child in another home, most often a foster care home. Caseworkers must often make a placement decision in chaotic, emergency situations. Both caseworkers and judges face severe constraints of time and resources. In addition, child welfare agencies and the courts have largely failed to develop specific criteria or guidelines in this area. Caseworkers and judges are often left to exercise wide, unguided discretion in making placement decisions. Working in this context, caseworkers often simply look for any open bed that they can find for a child. Moreover, although the courts review the caseworker's decision to remove a child from parental custody, they usually fail to review the caseworker's decision to place a child in a particular foster home (Herring 2003).

Within such a decision-making environment, caseworkers and judges need research-based criteria that are straightforward and easy to use in a time-constrained and complex setting. Aspects of evolutionary theory and behavioral research could support the development of such criteria—criteria that are based on more than intuition and the pressure of limited resources.

Example #2: Placement of Children with Kin Foster Parents

Child welfare laws now strongly favor the placement of children with foster parents who are kin. The 2008 Fostering Connections to Success and Increasing Adoptions Act requires states to identify, locate, and notify relatives in a timely manner when a child is removed from parental custody.³ The notice must explain the opportunity for the relative to serve as the child's foster parent and the support available to them. The law gives states discretion to define "relative" to include distant genetic kin and even individuals who simply have an established relationship with the child, but

³ Fostering Connections to Success and Increasing Adoptions Act of 2008, Pub. L. 110-351.

no genetic relationship. The law also allows states to waive non-safety foster care licensing standards for relatives on a case-by-case basis, thus eliminating potential barriers to kinship placement. In addition, the law gives states the option to use federal funds to provide financial assistance to kin foster parents who commit to serving as a child's permanent legal guardian (Grandfamilies State Law and Policy Resource Center 2012). Commentators have encouraged attorneys and judges to ensure that the child welfare agency has exercised due diligence to identify and notify all relatives, including both paternal and maternal relatives (Wentz and Beck 2012). As a result of this legal and policy support for kin placements, these types of placements have become prevalent, especially in large urban areas (Herring et al. 2009b).

In enacting the 2008 law and previous laws that encourage kin foster placements, Congress has failed to explain clearly the basis for its kin placement preference, a preference that is a break from past practice. Kin placements had been perceived as risky because they returned a child to an extended family within which maltreatment had occurred. The new preference for kin foster parents, thus, indicates a change in view concerning the risks and benefits of such placements, with many child welfare officials and lawmakers perceiving significant benefits arising from the familiarity and continuity offered by kin. The preference for kin also provides a placement decision rule that is relatively easy for resource-poor child welfare agencies and workers to apply (Herring 2012).

Child welfare researchers have been examining this preference by comparing kinship placements to non-kin placements. To date, this research has not been guided by any coherent theoretical approach or framework (Herring 2012). Researchers are now beginning to draw on evolutionary theory to fill this void (Perry et al. 2012; Zinn 2010; Herring et al. 2009b; Testa 2005). This theoretical perspective has the potential to raise novel questions and produce knowledge that would support more sophisticated foster care placement policies, possibly alleviating concerns about, and improving practice related to, kinship foster care placements.

For example, evolutionary concepts support the formulation of two testable hypotheses concerning kinship foster care placements (Herring 2008). The first is that, on average, children are likely to experience better treatment and outcomes in kinship foster care than in non-kin foster care. The concepts of degree of relatedness and inclusive fitness give rise to this hypothesis. These concepts begin with the premise that an individual benefits both from his or her own reproductive success and from the reproductive success of his or her genetic kin through the passing of shared genes to future generations (Hamilton 1964). Because of the indirect benefits realized from the reproductive success of kin, a mutation for kinship altruism will spread if the reproductive costs incurred by the altruist (C) are less than the reproductive benefits realized by the recipient (B) discounted by the degree of relatedness (i.e., the probability that they share specific genes) (r): $C < Br$. This condition often existed within the ancestral evolutionary environment, favoring kinship altruism (Hamilton 1964; Trivers 1985). The conceptual result is that one would reasonably expect individuals to favor close kin, especially in areas that impact reproductive success (e.g., provision of food and child care) (Hamilton 1964). As to child care

specifically, one would reasonably expect higher levels of investment from close kin in comparison to more distant kin, and certainly in comparison to non-kin.

Empirical research provides support for the first hypothesis. An early comprehensive review found that despite the fact that kinship foster homes received less support and monitoring, they produced outcomes similar to those produced by non-kin foster homes (Cuddeback 2004). In addition, several studies indicate that kinship placements are more stable, with stability an important indicator of positive outcomes (Cuddeback 2004; Chamberlain et al. 2006). Subsequent studies have confirmed this finding. For example, researchers expressly drawing on evolutionary concepts found that genetic kin placements are more stable than both nongenetic kin placements⁴ and non-kin placements (Perry et al. 2012).

Several researchers have begun to examine specific child well-being outcomes and levels of parental investment related to different types of foster homes. One study using a national longitudinal data set found that children placed in kinship care exhibited a higher level of mental health and well-being than children placed in non-kin care (Rubin et al. 2008). Another study using the same national data set compared parenting provided by grandmothers to that provided by non-kin foster parents, finding that grandmothers had better parenting scores (Dolan et al. 2009).

The second hypothesis that arises from evolutionary concepts is that children in kinship foster care are likely to experience, on average, better treatment and outcomes when placed with some types of kin rather than others. Two additional concepts give rise to this hypothesis. The first is the concept of paternity uncertainty and the laterality effect (Herring 2008). There is a difference in certainty of genetic relationship to a child for men versus women. Women can be virtually certain that the child they care for is their genetic child, whereas men cannot be so certain (Buss 2008). Thus, the patrilineal line is less certain and one would expect, on average, the parental investment of matrilineal kin to be higher than that of patrilineal kin (Buss 2008; Gaulin et al. 1997). For example, one could expect behavioral tendencies that yield, on average, a higher level of investment in grandchildren by maternal grandmothers than by paternal grandmothers.

The second relevant evolutionary concept is a sex effect (Herring 2008). Because women, on average, have a greater genetic stake in their children than do men, women have evolved a tendency to invest more in their children and men have evolved a tendency to invest more in mating effort and less in childcare (Buss 2008; Gaulin et al. 1997). This difference also impacts behavior toward other kin. For example, as women age and their fertility decreases, investing in close kin enhances their net inclusive fitness, whereas older men can pursue additional mating (Huber and Breedlove 2007). The conceptual result is that women tend to invest more in kin than men. For example, one could expect a maternal grandmother to invest more in her grandchild than would a maternal grandfather.

Research on grandparent investment supports the hypothesis concerning different types of kin placements. One line of grandparent investment studies examines

⁴ In the child welfare field, the definition of kin includes individuals who have a prior relationship with a child, but who are not genetically related to the child.

population registries in terms of child nutrition and mortality (Ragsdale 2004; Jamison et al. 2002; Volland and Beise 2002; Sear et al. 2000). A study using a registry from a village in central Japan is representative. The researchers studied the effects of grandparental presence on the probability of a child's death, finding that a child was 35% less likely to die if his or her maternal grandmother was present in the household. The presence of the paternal grandmother and both types of grandfather increased the likelihood of child death (Jamison et al. 2002).

Two comprehensive reviews of these population studies have been completed. Sear and Mace (2008) reviewed 45 studies and concluded that maternal grandmothers have consistent beneficial effects in terms of child survival, whereas paternal grandmothers have a more variable effect—sometimes beneficial, sometimes harmful. Grandfathers do not appear to affect child survival (Sear and Mace 2008). In response to Sear and Mace's work, Strassman and Garrard (2011) completed a meta-analysis of 17 core studies, concluding that both maternal grandparents have beneficial effects, whereas both paternal grandparents have negative effects (Strassman and Garrard 2011).

The debate and research in this area continues. However, the research to date indicates that maternal grandmothers have a positive effect. There may be no positive effects from other grandparents, with the possibility of negative effects for some grandparents.⁵

Another line of studies asks subjects to characterize the level of investment made by their grandparents. The early studies used young adults, with respondents indicating that maternal grandmothers invested the most, followed by maternal grandfathers and paternal grandmothers. Paternal grandfathers invested the least (Euler and Weitzel 1996). Subsequent studies have replicated these results, which remain robust when controlling numerous variables such as physical distance between grandparent and grandchild residence (Pollet et al. 2007; Laham et al. 2005). Two studies of note have used extensive data sets to generate similar findings (Danielsbacka et al. 2011; Pollet et al. 2009). Researchers have also found laterality effects and sex effects when examining investment by aunts and uncles and by cousins (Jeon and Buss 2007; McBurney et al. 2002; Gaulin et al. 1997).

In the child welfare context, researchers have begun to examine different types of kin foster placements. An early study in this area examined whether there were different levels of parental commitment exhibited by different types of foster parents (Testa 2005). The only differences were by degree of relatedness between foster parent and foster child. For example, as to intent to raise a child to adulthood, grandparents and aunts and uncles (second-degree kin) were more likely than more distant relatives, who were more likely than nonrelatives, to raise the foster child to adulthood (Testa 2005). These findings support an inquiry concerning distinctions among genetic kin rather than a simple bimodal inquiry comparing all genetic kin to all nongenetic kin (Herring 2008).

⁵ It should be noted that this research fails to identify the mechanism for these grandparent effects. Contemporary longitudinal studies of different grandparent/grandchild relationships may help address this gap in knowledge.

One researcher has pursued this line of inquiry. Using cluster analysis, Zinn (2010) has identified four distinct types of kin placement. The degree and type of kinship relationship between the foster parent and child is one of two primary indicators of caregiver competence.⁶ The first study that compares the four kinship placement types has found differences in terms of the timing and type of placement outcome (e.g., disruption, return to original family, or adoption) (Zinn 2012).

This line of research begins a worthwhile inquiry, but evolutionary concepts suggest that finer distinctions among kin-types may exist. This possibility raises the potential for additional fruitful research in this area.

In the meantime, the conceptual and empirical work to date has produced knowledge that has implications for child welfare law and policy. First, this work appears to support the current trend to use kin as foster parents. More controversially, this work may support the current situation in which child welfare agencies provide less service to kinship foster families. In an environment of severely limited time and resources, it may offer a justification for the kind of difficult choices that policy-makers may have to consider.

The research may support distinctions between close kin and relatively distant kin in making placement decisions. It may also support distinctions among second-degree kin. For example, all else being equal, child welfare agencies and the courts may be warranted in favoring placements with maternal grandmothers over placements with paternal grandmothers. More generally, these actors may rationally prefer matrilineal relatives over patrilineal relatives.

Researchers must conduct more studies that compare different types of kin foster parents before child welfare officials implement such placement policies, because the research to date does not yet provide robust support for these placement policies (Herring et al. 2009b). The current research may, however, support the less radical policy of using kinship type to determine the level of support services. For example, all else equal, child welfare agencies and the courts are likely warranted in considering the provision of higher levels of monitoring and support services to a paternal grandmother foster parent than to a maternal grandmother foster parent. Placements with paternal relatives would not be precluded, but the agencies and the courts could respond to such placements with higher levels of support and scrutiny. Such an approach may help achieve an optimal allocation of severely limited service resources.

In the meantime, research in this area must continue. For example, researchers could use the large longitudinal data set from the National Survey of Child and Adolescent Well-being (NSCAW) to compare placements with maternal grandmothers to those with paternal grandmothers. This data set would allow for a comparison of numerous parental investment and child outcome measures (*see, e.g.*, Dolan et al. 2009). Findings from such an analysis may justify a primary data collection project designed to test a series of hypotheses derived from evolutionary theory concerning kinship care.

⁶ The other primary indicator is number and age of non-foster children in the home.

Leading figures in the field of evolutionary psychology and the field of social work support further inquiry in this specific area. Evolutionary scholars Martin Daly and Gretchen Perry have advocated for the consideration of kinship in child welfare research and policy (Daly and Perry 2011). Moreover, social work researchers Richard Barth and Mary Hodorowicz have asserted a similar position in relation to foster care and adoptive placements (Barth and Hodorowicz 2011). These contributions add intellectual energy and depth to the inquiry. Together, they identify the opportunity for rich interdisciplinary research that has significant implications for child welfare law, policy, and practice.

The potential contribution of evolutionary theory and behavioral research in this area is not limited to the consideration of kinship types. One line of inquiry illustrates this point. An essential component of kinship altruism is an ability to recognize kin. A behavioral tendency to perceive certain signals as indicators of kinship serves this function. These kinship cues often operate at an unconscious level, and because these cognitive mechanisms are fallible, an individual may unconsciously and erroneously perceive another as kin (Park et al. 2008).

One category of kinship cues relies on phenotypic resemblance. These cues include resemblance of facial features, shared attitudes, and similar body odor (Park et al. 2008; Burnstein 2005). According to evolutionary theory, such cues may evoke favorable treatment whether or not the individuals are genetic kin (Park et al. 2008). In addition, in light of paternity uncertainty these cues are likely to affect patrilineal relationships more than matrilineal relationships because kin with uncertain genetic links are more likely to depend on external signals of kinship (Park et al. 2008; Platek et al. 2002, 2003, 2004).

Researchers have tested the predictions related to these kinship cues. Several researchers have conducted studies that use arrays of photographs of children's faces, with one photograph being a morph of a child's face with the subject's face. The researchers have consistently found that adults favor a child with a face that has been morphed with their own facial features (Platek et al. 2002, 2003, 2004; DeBruine 2004). Some studies indicate that this behavioral tendency is stronger for men (Alvergne et al. 2007, 2010; Platek et al. 2002, 2003, 2004). For example, studies have found that men place much more emphasis on perceived resemblance between self and child than women in considering the adoption of an unrelated child (Volk and Quinsey 2002, 2007). Additional studies have found that men's actual resemblance to their putative children as assessed by objective observers is positively correlated with men's level of parental investment (Alvergne et al. 2009, 2010; Prokop et al. 2010).

This type of research has implications for foster care placement policy and practice. The recent work suggests that objective third parties can assess foster parent/child facial resemblance so as to predict levels of parental investment (Alvergne et al. 2010). This raises the possibility that child welfare agency caseworkers could consider and assess facial resemblance in placing children with a particular set of foster parents, especially in regard to the foster father.

Of course, the consideration of facial resemblance would not necessarily be determinative. However, if a caseworker places a child in a setting with little parental/

child resemblance, the caseworker would be on notice that the placement may present a risk of relatively low parental investment. In such a situation, it may be appropriate for the caseworker to consider enhanced support and monitoring services.

This research may also have implications for federal law that precludes the consideration of race in making placement decisions.⁷ Race certainly has implications for facial resemblance, with different-race placements possibly increasing the risk of low parental investment. A legal mandate to ignore this factor when deciding where to place a child may expose the child to an increased risk of harm. Conversely, the consideration of race in making placement decisions may enhance child well-being. (It should be noted that the benefits of considering race extend beyond the reduction in the risk of harm theorized here, and include, for example, enhanced guidance from adult caretakers who have personal knowledge and direct experience with the social and cultural effects of the child's race. Common specific examples in the field include the capacity for black foster parents to provide a black child with guidance on hair care and on the likelihood of racial profiling by police. This capacity for enhanced parental guidance provides benefits to the child, allowing him or her to more effectively navigate a society in which race matters.) Thus, this type of behavioral research may support not only the development of policy and practice, but also law reform in this area (Herring 2007).

Conclusion

The two primary examples included in this chapter illustrate the potential for evolutionary theory and behavioral research to produce knowledge relevant to child welfare law, policy, and practice. This knowledge may contribute to the construction of research-based risk assessment tools by identifying conditions or situations that increase the risk of violence and other forms of maltreatment towards children. The research in this area may also contribute to the delineation of criteria for foster care placement decisions by identifying factors that predict the level of parental investment. In addition, the knowledge concerning conditions, situations, and factors that present a relatively high risk of maltreatment and/or low parental investment may guide child welfare caseworkers and agencies, along with judges, in making decisions concerning the appropriate type and level of support and monitoring services. This would assist actors in the child welfare system in their attempts to wisely allocate severely limited resources.

There is great potential for additional useful research in this area. New developments in evolutionary theory and behavioral research may have implications for child welfare. One example is provided by the research related to the possible downstream effects of the X-chromosome. This research suggests that paternal grandmothers may have evolved a behavioral tendency to favor granddaughters at the expense of grandsons (Fox et al. 2011; Johow et al. 2011). Further research in

⁷ The Multiethnic Placement Act, Pub. L. 103-382, sect. 551.

this area could have implications for kin foster care placement policy and practice because, on average, placing boys with paternal grandmothers may increase the risk of harm and the likelihood of low parental investment. This line of inquiry calls for interdisciplinary research, with researchers from the fields of evolutionary science, law, and social work collaborating to produce knowledge that is relevant to child welfare law, policy, and practice.

This area of research presents a rich opportunity for researchers from several fields to learn about one another's issues and approaches to address the phenomenon of violence. Evolutionary theory and behavioral biology research can serve as the coalescing force for initiatives that may yield significant benefits in the field.

References

- Adler-Baeder, F. (2006). What do we know about the physical abuse of stepchildren? A review of the literature. *Journal of Divorce & Remarriage*, *44*, 67–81.
- Alexandre, G. C., Nadanovsky, P., Moraes, C. L., & Reichenheim, M. (2010). The presence of a stepfather and child physical abuse, as reported by a sample of Brazilian mothers in Rio de Janeiro. *Child Abuse & Neglect*, *34*, 959–966.
- Alexandre, G. C., Nadansky, P., Wilson, M., Daly, M., Moraes, C. L., & Reichenheim, M. (2011). Cues of paternal uncertainty and father to child physical abuse as reported by mothers in Rio de Janeiro, Brazil. *Child Abuse & Neglect*, *35*, 567–573.
- Alvergne, A., Faurie, C., & Raymond, M. (2007). Differential facial resemblance of young children to their parents: who do children look like more? *Evolution and Human Behavior*, *28*, 135–144.
- Alvergne, A., Faurie, C., & Raymond, M. (2009). Father-offspring resemblance predicts paternal investment in humans. *Animal Behaviour*, *78*, 61–69.
- Alvergne, A., Faurie, C., & Raymond, M. (2010). Are parents' perceptions of offspring facial resemblance consistent with actual resemblance? Effects on parental investment. *Evolution and Human Behavior*, *31*, 7–15.
- Anderson, K. G., Kaplan, H., & Lancaster, J. B. (1999). Paternal care by genetic fathers and stepfathers I: Reports from Albuquerque men. *Evolution and Human Behavior*, *20*, 405–431.
- Anderson, K. G., Kaplan, H., & Lancaster, J. B. (2007). Confidence of paternity, divorce, and investment in children by Albuquerque men. *Evolution and Human Behavior*, *28*, 1–10.
- Apicella, C. L., & Marlowe, F. W. (2004). Perceived mate fidelity and paternal resemblance predict men's investment in children. *Evolution and Human Behavior*, *25*, 371–378.
- Appel, A. E., & Holden, G. W. (1998). The co-occurrence of spouse and physical child abuse: A review and appraisal. *Journal of Family Psychology*, *12*, 578–599.
- Austin, M. J., D'Andrade, A., Lemon, K., Benton, A., Chow, B., & Reyes, C. (2005). Risk and safety assessment in child welfare: Instrument comparisons. Bay area social services consortium evidence for practice series. www.bassc.net. Accessed Sept 2012.
- Baird, C., & Wagner, D. (2000). The relative validity for actuarial- and consensus-based risk assessment systems. *Children and Youth Services Review*, *22*, 839–871.
- Barth, R., & Hodorowicz, M. (2011). Foster and adopted children who die from filicide: What can we learn and what can we do? *Adoption Quarterly*, *14*, 85–106.
- Burnstein, E. (2005). Altruism and genetic relatedness. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 528–551). Hoboken, NJ: John Wiley & Sons, Inc.
- Buss, D. (2008). *Evolutionary psychology: the new science of the mind*. Pearson/Allyn and Bacon, Boston, MA.

- Case, A., & Paxson, C. (2001). Mothers and others: Who invests in children's health? *Journal of Health Economics*, *20*, 301–328.
- Case, A., Lin, I. F., & McLanahan, S. (2000). How hungry is the selfish gene? *Economic Journal*, *110*, 781–804.
- Chamberlain, P., Price, J. M., Reid, J. B., Landsverk, J., Fisher, P. A., & Stoolmiller, M. (2006). Who disrupts from placement in foster and kinship care? *Child Abuse and Neglect*, *30*, 409–424.
- Chan, K. L., Brownridge, D. A., Fong, D. Y. T., Tiwari, A., Leung, W. C., & Ho, P. C. (2012). Violence against pregnant women can increase the risk of child abuse: A longitudinal study. *Child Abuse & Neglect*, *36*, 275–284.
- Cuddeback, G. S. (2004). Kinship family foster care: A methodological and substantive synthesis of research. *Children & Youth Services Review*, *26*, 623–639.
- Daly, M., & Perry, G. (2011). Has the child welfare profession discovered nepotistic biases? *Human Nature*, *22*, 350–369.
- Daly, M., & Wilson, M. (1981). Abuse and neglect of children in evolutionary perspective. In R. D. Alexander & D. W. Tinkle (Eds.), *Natural selection and social behavior*. New York: Chiron.
- Daly, M., & Wilson, M. (1985). Child abuse and other risks of not living with both parents. *Ethology & Sociobiology*, *6*, 197–210.
- Daly, M., & Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine de Gruyter.
- Daly, M., & Wilson, M. (1994). Some different attributes of lethal assaults on small children by stepfathers versus genetic fathers. *Ethology and Sociobiology*, *15*, 207–217.
- Daly, M., & Wilson, M. (1998). *The truth about Cinderella*. London: Weidenfeld & Nicolson.
- Daly, M., & Wilson, M. (2001). An assessment of some proposed exceptions to the phenomenon of nepotistic discrimination against stepchildren. *Annales Zoologici Fennici*, *38*, 287–296.
- Danielsbacka, M., Tanskanen, A. O., Jokela, M., & Rotkirch, A. (2011). Grandparental child care in Europe: Evidence of preferential investment in more certain kin. *Evolutionary Psychology*, *9*, 3–24.
- DeBruine, L. M. (2004). Resemblance to self increases the appeal of child faces to both men and women. *Evolution and Human Behavior*, *25*, 142–54.
- Dolan, M. M., Casanueva, C., Smith, K. R., & Bradley, R. H. (2009). Parenting and the home environment provided by grandmothers of children in the child welfare system. *Children & Youth Services Review*, *31*, 784–796.
- Euler, H. A., & Weitzel, B. (1996). Discriminative grandparental solicitude as reproductive strategy. *Human Nature*, *7*, 39–59.
- Fox, M., Johow, J., & Knapp, L. A. (2011). The selfish grandma gene: the roles of the X-chromosome and paternity uncertainty in the evolution of grandmothering behavior and longevity. *International Journal of Evolutionary Biology*, *2011*, 1–9.
- Gambrill, E., & Shlonsky, A. (2000). Risk assessment in context. *Children and Youth Services Review*, *22*, 813–837.
- Gaulin, S. J. C., McBurney, D. H., & Brakeman-Wartell, S. L. (1997). Matrilateral biases in the investment of aunts and uncles: a consequence and measure of paternity uncertainty. *Human Nature*, *8*, 139–151.
- Geary, D. C. (2000). Evolution and proximate expression of human paternal investment. *Psychological Bulletin*, *126*, 55–77.
- Grandfamilies State Law and Policy Resource Center. (2012). Judges' roles in implementing fostering connections: Relative caregiver provisions. *Child Law Practice*, *31*, 88–93.
- Hamilton, W. D. (1964). The genetical evolution of social behavior. I, II. *Journal of Theoretical Biology*, *7*, 1–52.
- Harris, G. T., Hilton, N. Z., Rice, M. E., & Eke, A. W. (2007). Children killed by genetic parents versus stepparents. *Evolution and Human Behavior*, *28*, 85–95.
- Herring, D. J. (2003). Child placement decisions: The relevance of facial resemblance and biological relationships. *Jurimetrics*, *43*, 387–414.
- Herring, D. J. (2007). The multiracial placement act: Threat to foster child safety and well-being. *University of Michigan Journal of Law Reform*, *41*, 89–120.

- Herring, D. J. (2008). Kinship foster care: Implications of behavioral biology research. *Buffalo Law Review*, *56*, 495–556.
- Herring, D. J. (2009a). Fathers and child maltreatment: A research agenda based on evolutionary theory and behavioral biology research. *Children and Youth Services Review*, *31*, 935–945.
- Herring, D. J. (2012). Evolutionary theory and behavioural biology research: Implications for law. In S. C. Roberts (Ed.), *Applied Evolutionary Psychology*. Oxford: Oxford University Press.
- Herring, D. J., Shook, J. J., Goodkind, S., & Kim, K. H. (2009b). Evolutionary theory and kinship foster care: An initial test of two hypotheses. *Capital University Law Review*, *38*, 291–318.
- Hofferth, S. L., & Anderson, K. G. (2003). Are all dads equal? Biology versus marriage as a basis for paternal investment. *Journal of Family and Marriage*, *65*, 213–232.
- Huber, B. R., & Breedlove, W. L. (2007). Evolutionary theory, kinship, and childbirth in cross-cultural perspective. *Cross-Cultural Research*, *41*, 196–219.
- Jamison, C. S., Cornell, L. L., Jamison, P. L., Nakazato, H. (2002). Are all grandmothers equal? A review and a preliminary test of the “grandmother hypothesis” in Tokugawa, Japan. *American Journal of Physical Anthropology*, *119*, 67–76.
- Jeon, J., & Buss, D. M. (2007). Altruism towards cousins. *Proceedings of the Royal Society B*, *274*, 1181–1187.
- Johow, J., Fox, M., Knapp, L. A., & Volland, E. (2011). The presence of a paternal grandmother lengthens interbirth interval following the birth of a granddaughter in Krummhorn (18th and 19th centuries). *Evolution and Human Behavior*, *32*, 315–325.
- Jones, O. D. (1997). Evolutionary analysis in law: An introduction and application to child abuse. *North Carolina Law Review*, *75*, 1117–1242.
- Klebens, J., Bayon, M. C., & Sierra, M. (2000). Risk factors and context of men who physically abuse in Bogota, Colombia. *Child Abuse & Neglect*, *24*, 323–332.
- Knoke, D., & Trocme, N. (2005). Reviewing the evidence on assessing risk for child abuse and neglect. *Brief Treatment and Crisis Intervention*, *5*, 310–327.
- Laham, S. M., Gonsalkorale, K., & von Hippel, W. (2005). Darwinian grandparenting: Preferential investment in more certain kin. *Personality and Social Psychology Bulletin*, *31*, 63–72.
- Lee, L. C., Kotch, J. B., & Cox, C. E. (2004). Child maltreatment in families experiencing domestic violence. *Violence and Victims*, *19*, 573–591.
- McBurney, D. H., Simon, J., & Gaulin S. J. C. (2002). Matrilateral biases in the investment of aunts and uncles: Replication in a population presumed to have high paternity certainty. *Human Nature*, *13*, 391–402.
- O’Connor, A., & Boag, S. (2010). Do stepparents experience more parental antagonism than biological parents? A test of evolutionary and socialization perspectives. *Journal of Divorce and Remarriage*, *51*, 508–525.
- Park, J. H., Schaller, M., & Van Vugt, M. (2008). The psychology of human kin recognition: Heuristic cues, erroneous inferences, and their implications. *Review of General Psychology*, *12*, 215–235.
- Perry, G., Daly, M., & Kotler, J. (2012). Placement stability in kinship and non-kin foster care: A Canadian study. *Children and Youth Services Review*, *34*, 460–465.
- Pew Research Center. (2011). A portrait of stepfamilies. Pew Social & Demographic Trends. www.pewsocialtrends.org/2011/01/13/a-portrait-of-stepfamilies/. Accessed Sept 2012.
- Platek, S. M., Burch, R. L., Panyavin, I. S., Wasserman, B. H., & Gallup, G. G., Jr. (2002). Reactions to children’s faces: Resemblance affects males more than females. *Evolution and Human Behavior*, *23*, 159–166.
- Platek, S. M., Critton, S. R., Burch, R. L., Frederick, D. A., Myers, T. E., & Gallup, G. G., Jr. (2003). How much paternal resemblance is enough? Sex differences in hypothetical investment decisions but not in the detection of resemblance. *Evolution and Human Behavior*, *24*, 81–87.
- Platek, S. M., Raines, D. M., Gallup, G. G., Jr., Mohamed, F. B., Thomson, J. W., Myers, T. E., et al. (2004). Reactions to children’s faces: Males are more affected by resemblance than females are, and so are their brains. *Evolution and Human Behavior*, *25*, 394–405.
- Pollet, T. V., Nelissen, M., & Nettle, D. (2009). Lineage based differences in grandparental investment: Evidence from a large British cohort study. *Journal of Biosocial Science*, *41*, 355–379.

- Pollet, T. V., Nettle, D., & Nelissen, M. (2007). Maternal grandmothers do go the extra mile: Factoring distance and lineage into differential contact with grandchildren, *Evolutionary Psychology*, 5, 832–843.
- Prokop, P., Obertova, Z., & Fedor, P. (2010). Paternity cues and mating opportunities: What makes fathers good? *Acta Ethologica*, 13, 101–107.
- Ragsdale, G. (2004). Grandmothering in Cambridgeshire, 1770–1861. *Human Nature*, 15, 301–317.
- Rubin, D., Downes, K., O'Reilly, A., McKonnen, R., Luan, X., & Localio, R. (2008). Impact of kinship care on behavioral well-being for children in out-of-home care. *Archives of Pediatric Adolescent Medicine*, 162, 550–556.
- Rumm, P. D., Cummings, P., Krauss, M. R., Bell, M. A., & Rivara, F. P. (2000). Identified spouse abuse as a risk factor for child abuse. *Child Abuse & Neglect*, 24, 1375–1381.
- Rycus, J. S., & Hughes, R. C. (2003). *Issues in risk assessment in child protective services: Policy white paper*. Columbus, OH: North American Resource Center for Child Welfare.
- Schnitzer, P. G., & Ewigman, B. G. (2005). Child deaths resulting from inflicted injuries: Household risk factors and perpetrator characteristics. *Pediatrics*, 116, 687–693.
- Sear, R., & Mace, R. (2008). Who keeps children alive? A review of the effects of kin on child survival. *Evolution and Human Behavior*, 29, 1–18.
- Sear, R., Mace, R., & McGregor, I. A. (2000). Maternal grandmothers improve nutritional status and survival of children in rural Gambia. *Proceedings of the Royal Society of London B*, 267, 1641–1647.
- Strassmann, B. I., & Garrard, W. M. (2011). Alternatives to the grandmother hypothesis: A meta-analysis of the association between grandparental and grandchild survival in patrilineal populations. *Human Nature*, 22, 201–222.
- Sugiyama, L. S. (2005). Physical attractiveness in adaptationist perspective. In D. M. Buss (Ed.), *The Handbook of Evolutionary Psychology* (pp. 292–343). Hoboken, NJ: John Wiley & Sons.
- Testa, M. F. (2005). The quality of permanence—lasting or binding? Subsidized guardianship and kinship foster care as alternatives to adoption. *Virginia Journal of Social Policy & Law*, 12, 499–534.
- Tooley, G. A., Karakis, M., Stokes, M., & Ozanne-Smith, J. (2006). Generalising the Cinderella effect to unintentional childhood fatalities. *Evolution and Human Behavior*, 27, 224–230.
- Trivers, R. (1985). *Social evolution*. Menlo Park, CA: Benjamin/Cummings Publishing Company.
- van IJzendoorn, M. H., Euser, E. M., Prinzie, P., Juffer, F., & Bakermans-Kranenburg, M. J. (2009). Elevated risk of child maltreatment in families with stepparents but not with adoptive parents. *Child Maltreatment*, 14, 369–375.
- Van Schaik, C. P., & Paul, A. (1997). Male care in primates: Does it ever reflect paternity? *Evolutionary Anthropology*, 5, 152–156.
- Voland, E., & Beise, J. (2002). Opposite effects of maternal and paternal grandmothers on infant survival in historical Krummhorn. *Behavioral Ecology and Sociobiology*, 52, 435–443.
- Volk, A., & Quinsey, V. L. (2002). The influence of infant facial cues on adoption preferences. *Human Nature*, 13, 437–455.
- Volk, A., & Quinsey, V. L. (2007). Parental investment and resemblance: Replications, refinements, and revisions. *Evolutionary Psychology*, 5, 1–14.
- Weekes-Shackelford, V. A., & Shackelford, T. K. (2004). Methods of filicide: Stepparents and genetic parents kill differently. *Violence and Victims*, 19, 75–81.
- Weithorn, L. A. (2001). Protecting children from exposure to domestic violence: The use and abuse of child maltreatment statutes. *Hastings Law Journal*, 53, 1–156.
- Wentz, R. M., & Beck, K. L. (2012). Maintaining family relationships for children in the child welfare system. *Child Law Practice*, 31, 97, 102–108.
- Wilson, M., Daly, M., & Weghorst, S. J. (1980). Household composition and the risk of child abuse and neglect. *Journal of Biosocial Science*, 12, 333–340.
- Yampolskaya, S., Greenbaum, P. E., & Berson, I. R. (2009). Profiles of child maltreatment perpetrators and risk for fatal assault: A latent class analysis. *Journal of Family Violence*, 24, 337–348.

- Zinn, A. (2010). A typology of kinship foster families: Latent class and exploratory analyses of kinship family structure and household composition. *Children and Youth Services Review, 32*, 325–337.
- Zinn, A. (2012). Kinship foster family type and placement discharge outcomes. *Children and Youth Services Review, 34*, 602–614.
- Zvoch, K. (1999). Family type and investment in education: A comparison of genetic and stepparent families. *Evolution & Human Behavior, 20*, 453–464.