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Original Article

Fostering relations: first sex and marital timings for children raised by kin and non-kin carers☆,☆☆

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ABSTRACT

Kinship fostering is generally preferred to non-kin fostering by policy makers in the U.S. and elsewhere. Researchers and policy makers alike tend to provide several proximate reasons for why this may be, generally neglecting an ultimate evolutionary framework. However, kin selection theory predicts that in the absence of genetically related parents, care from kin will result in the most similar life history outcomes. In low-fertility settings, parents typically favour increased investment in embodied capital and thus delayed reproductive life history strategy. Using archival data from the original Kinsey survey, collected in the U.S. from 1938 to 1963, we used survival analyses to compare the effects of living with kin and non-kin fosterers in childhood on timings of first sex and marriage. Our results support a kin selection hypothesis showing that while fostered children have accelerated life histories compared to children from "intact families", kin fosterers buffer children from early sexual and reproductive behaviors, compared to children cared for by non-kin.

1. Introduction

Fostering by kin – genetically related family – is often assumed to be preferable to fostering by non-kin, despite inconsistent evidence of the superiority of either method (Carpenter, Clyman, Davidson, & Steiner, 2001; Sakai, Lin, & Flores, 2011; Services, 2013; though policy preferences in the US have changed in the past century: Daly & Perry, 2011). Policy makers and non-evolutionary researchers have suggested a variety of proximate reasons for why this may be the case: continuity for foster children (in their community, school, culture, etc.) (Cuddeback, 2004); greater opportunity for contact with children's genetically related parents and families (although, in some cases this could also be considered a problematic aspect of kin care); reduced separation anxiety for children (Carpenter et al., 2001); and the belief that, on average, foster parents are likely to care more for related children (Vanschoonlandt, Vanderfaeillie, Van Holen, De Maeyer, & Andries, 2012). Several recent studies have measured the outcomes of fostering by kin versus non-kin carers, with no clear trends indicating a superiority of either fostering method (Cuddeback, 2004). Studies have considered outcomes including foster children's behavior (Sakai et al., 2011; Vanschoonlandt et al., 2012), mental health (Sakai et al., 2011; Vanschoonlandt et al., 2012), adolescent sexual behavior (Carpenter et al., 2001), first pregnancies (Carpenter et al., 2001; Sakai et al., 2011), contact frequency with parents (Vanschoonlandt et al., 2012), education attainments (Del Valle, Lázaro-Visa, López, & Bravo, 2011), and placement stability (Perry, Daly, & Kotler, 2012). Yet, these studies are primarily descriptive, and lack a clear theoretical framework from which predictions may be formed and results understood, though Daly and Perry (2011) provide a compelling case for the utility of evolutionary perspective in child welfare. Evolutionary theory provides a more comprehensive ultimate explanation as to why we could expect genetically related foster parents to improve children's developmental, behavioral, and health outcomes.

In the current study, we are interested in understanding the effects of fostering by kin and non-kin on males' and females' reproductive life history strategies, specifically, their progressions to sexual debut (first sexual intercourse) and first marriage. In the absence of genetic parents, we expect kin carers to more closely represent the adaptive interests of genetic parents than non-kin carers. According to kin selection theory, genetically related individuals are expected to act more altruistically towards, and invest more heavily in, one another than less closely or unrelated individuals (Hamilton, 1964). By helping family members, individuals are able to enhance their own inclusive fitness.

☆☆ Author note: Data from the original Kinsey surveys are archived and available at The Kinsey Institute for Research in Sex, Gender, and Reproduction, at Indiana University, Bloomington. Those interested in using these data should contact User Services at The Kinsey Institute Library to obtain current application materials for use of archives and special collections.
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Abundant evidence has shown that children who grow up in homes with their genetic parents are physically safer than those children not raised in such "intact families" (Daly & Wilson, 1985). Children raised in non-intact homes are also more likely to partake in risky behavior, sexual (Lenciauskiene & Zaborskis, 2008) and otherwise (Daly & Wilson, 1985). The presence of genetic parents appears to have a protective effect on children, in terms of both physical well-being and decision-making. Despite frequent and often substantial parenting effort, stepparents (non-kin) have on average been associated with more negative consequences for children's' health (Case & Paxson, 2001) and safety (Wilson, Daly, & Weghorst, 1980). This literature suggests that while any caregivers are better than none and, regardless of genetic relation, attentive caregivers are better than inattentive ones, on average intact genetically related families are best at buffering against childhood harm. In line with kin selection theory, we therefore predict that in the absence of genetic parents, kin should confer a similar, though not as strong, buffering effect on foster children's outcomes, when compared with those children who are fostered by unrelated carers. In other words, the outcomes of children in kin care should look more like those of children from intact families, compared to children in non-kin care.

Two previous studies focusing specifically on the effects of kin versus non-kin fostering during childhood on subsequent sexual and reproductive behavior have found that those placed in kin care experience earlier pregnancies both compared to children in non-kin foster care (Sakai et al., 2011) and compared to other sexually active non-fostered youth (Carpenter et al., 2001). One of these studies also found that individuals raised in kin care experience younger ages at first consensual sex compared to non-fostered individuals (Carpenter et al., 2001). Not all of these results are perhaps what we would expect assuming kin fostered children should be more similar to those raised by intact families (i.e., non-fostered children) than those fostered by non-kin.

While informative, these two studies (Carpenter et al., 2001; Sakai et al., 2011) suffer from several methodological shortcomings, possibly accounting for the unexpected direction of these findings. Sakai et al. (2011) thoroughly consider the effects of kin versus non-kin foster care on children's behavior and mental health while controlling for baseline behavioral problems and mental health. Their study, however, captures only a three year period after placement, and with only about 20% of the sample over age 11 years at the time of baseline assessment, few participants had reached sexual maturity by the follow up three years later, making this a less than ideal sample for studying first sex and first births. On the other hand, Carpenter et al. (2001) use multiple linear regressions to predict both age at first consensual sex and age at first birth, but only use data for females and exclude all individuals who are not sexually active at time of interview (i.e. they ignore censored cases), introducing a bias towards females whose first sexual activity occurs at younger ages. Additionally, Carpenter and colleagues (2001) run models for the effects of kin and non-kin fostering separately. In each model, females in foster care (kin or non-kin) are compared to females in the comparison group of not being in foster care. This analysis makes the results difficult to interpret as the two fostering groups are not compared to one another directly.

The methodological complications outlined above are problems common in much of the literature on the effects of fostering on children. Orme and Buehler (2001) reviewed 34 studies on effects of fostering on a variety of outcomes – home environment, family functioning, temperament, mental health, etc. – and also note the concerns we raise here, in addition to several others. At the time of their review, the studies reviewed primarily used cross-sectional data and lacked meaningful comparison groups for those in foster care. Additionally, few studies differentiated between kin and non-kin fostering despite, as Orme and Buehler (2001) note, substantial rates of kin fostering in past decades as well as concerns raised regarding the quality of kin fostering environments (Berrick, 1997; Sakai et al., 2011).

1.1. Current Study

The current study attempts to examine the effects of kin versus non-kin care on children, while also addressing several of the described methodological problems found in earlier studies. We use discrete-time event history analyses, a technique which allows us to include censored cases – those for whom events (first sex or marriage) have not yet occurred – leading to more accurate prediction of timings of each event (Singer & Willett, 1993). Our sample includes both males and females aged 18 years and over, an ideal sample to consider sexual and reproductive behavior. Children fostered by kin and non-kin are compared directly in our models, and we also compare kin and non-kin fostered children to those from intact families. Family composition (intact, kin fostered, non-kin fostered) is measured from ages six to 14 years for theoretical and data-related reasons (see Methods). We also consider the status of participants' parents (whether alive, dead, or divorced) before age six, in order to control for other family disruption prior to when the fostering arrangement came about. We do not have available information on the circumstance that led to the child being placed in foster care, but by controlling for death or divorce of the child's natural parents we are able to partly eliminate the known confounding effects of family stress in general on both males' and females' sexual and reproductive timings (Alvergne, Faurie, & Raymond, 2008; Amato & Kane, 2011). The current study is designed within an evolutionary framework, allowing for a theory-driven approach to the observed patterns of fostering effects on males' and females' sexual and reproductive behavioral strategies. The aim of this research is to not only further our understanding of evolutionary behavioral responses to early life environments, but also add to an important body of literature exploring the practical consequences of fostering on child development.

We hypothesize that kin care buffers the effects of fostering by serving as a close proxy for being raised by genetically related parents. Specifically, we expect kin carers to slow males' and females' progressions to sexual debut relative to non-kin carers; this has several health implications, as earlier age at first sex is on the whole associated with more risk due to associations with sexually transmitted infections, unintended pregnancies, and higher probability of the first sexual experience occurring under duress (Wellings et al., 2001). Something important to note, however, is that while early sexual and reproductive behavior is often considered unfavorable by policy makers, healthcare practitioners, and families, from an evolutionary life history theory viewpoint, early reproduction can be a logical (though not necessarily conscious) fitness-enhancing strategy under certain environmental conditions (Coall, Dickins, & Nettle, 2011).

As there is strong cultural sentiment within the U.S. for sexual and reproductive behaviors to most favorably occur within the context of a marital relationship (Laumann, Gagnon, Michael, & Michaels, 1994; Finer, 2007; Kantor, Santelli, Teitlet, & Balmer, 2008; Garcia & Kruger, 2010), we would expect kin to promote a later age at marriage and slower progression to birth. In this perspective, marriage is an institutional contract intended to signal reductions in mate search and to formalize romantic pair-bonds, the context within which most sexual and reproductive behaviors historically and cross-culturally occur (Gray & Garcia, 2013). Kin may encourage delayed sexual and reproductive behavior to be able to invest in the embodied capital of their foster children, much as intact families tend to do in high income, low fertility societies (Anderson, Kaplan, & Lancaster, 1999). Embodied capital concerns investment in physical growth and health, but also includes investment in skills and education which are important in a wage-market economy for giving young adults a competitive advantage, particularly in the mating market (Kaplan,