Introduction

Stepfamilies, adoption and other forms of the family in hunter-gatherers

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The original aim of this *Hunter-Gatherer Research* special issue was to examine what was known about stepfamilies in hunter-gatherer cultures. While stepfamilies

remain the issue's focus, ethnographers invited to submit articles quickly pointed out the diverse range of family formations. The focus on stepfamilies was partly due to an interest in understanding the nature and frequency of hunter-gatherer children living without one or both natal parents. However, hunter-gatherer children may live with a non-genetic parent or relatives in several contexts besides stepfamilies: non-sororal polygynous families (child lives with both a genetic and non-genetic mother); non-fraternal polyandry (child lives with both a genetic and non-genetic father); adoptive or foster families (child is transferred to a new family and may reside with one genetic relative, eg aunt or uncle, and one non-genetic relative, ie the spouse of the genetic relative; or a single mother may move into a household with her sister, brother or parents who may have unrelated spouses). Families may also include non-residential social fathers or mothers, such as in partible paternity or 'godparents' among the Ache (Hill & Phelps 2024) or comarriages among the Inuit (Burch 1965). The special issue emphasises stepfamilies due to the lack of studies on the topic but considers adoption and other family formations where children live without one or both of their genetic parents. The articles are exploratory and primarily descriptive.

Studies of step-parenting and adoption are fundamental for understanding hunter-gatherers and the lives of children for several reasons. First, a child in a hunter-gatherer culture seldom stays with their natal parents throughout childhood and adolescence. Adult mortality and divorce rates are high, remarriage (or cohabitation) is common, and cultural norms or institutions for child transfer to other families exist, all of which can contribute to establishing step or adoptive families. While stepfamilies and adoption are regular features of hunter-gatherer cultures, few researchers have described or highlighted these families. For instance, the roles of step-parents or adoptive parents are not discussed in child-focused studies of social learning, economic contributions of stepchildren or adopted children are seldom considered, studies of allomaternal care/cooperative breeding rarely mention step-parents, step or adopted children, and ethnographers seldom describe the cultural ideas about step or adoptive parents or children. Emphasis is generally placed on the child's relationships with the genetic nuclear family members, ie mother, father and siblings. The emphasis may reflect a Euro-American (EA) bias toward genetically based nuclear families or a natural inclination to examine the roles of genetically related individuals. David Schneider observed long ago that 'blood' or shared genetic inheritance was central to EA's feelings about the family: 'The fact that the relationship of blood cannot be ended or altered and that it is a state of almost mystical commonality and identity is […] quite explicit in American culture (1968:25).' Regardless of the reasons for the biases, demographic and

cultural features of small-scale and hunter-gatherer groups indicate that a child seldom stays with both natal parents throughout the dependency period.

Second, stepfamilies are increasingly common in the US and other developed countries, including Japan and other Asian countries (Nozawa 2020), primarily due to increased divorce rates. Wiemers et al (2019) found that 30% of US households have stepkin ties either in the parent or the adult child generation of their family. The frequency of stepfamilies varies substantially by country, from 12% in Slovenia to 32% in East Germany (Heuveline et al 2003). An abundance of books and articles exist on EA stepfamilies, but the research usually views stepfamilies as problematic; they have deficits in comparison to the genetic nuclear family model, and they lead to adverse outcomes, ie they contribute to all sorts of mental and behavioural issues for stepchildren (Ganong & Coleman 2018). Research in the US shows that children in stepfamilies are at double the risk for mental health problems (Biblarz & Raferty 1999) and have lower academic success and poorer quality of peer relationships (Amato & Sobolewiski 2004).

Issues for adopted children are somewhat different. The number of children in adoptive families is much lower than the number of children in stepfamilies, and the numbers have been declining in the last few years (Kreider & Lofquist 2014). About 2–4% of US families have an adopted child; just over a majority of the adoptions are by step-parents or by genetic relatives (Brodzinsky & Pinderhughes 2002). Adopted children usually do better after adoption partly due to the increased economic and social-emotional support they receive from adoptive parents; adoptive families have more education and wealth than the average US household (Hanlon & Quade 2022). Still, they often have issues with attachment, identity, social adjustment and academic achievement (Brodzinsky & Pinderhughes 2002).

These studies seldom, if ever, include data from hunter-gatherers and other small-scale cultures. This special issue places the EA studies of step and adoptive children living with non-genetically related family members into a comparative context. Hunter-gatherers are substantially different from EA cultures in ways that can impact adoptive or step-parent-stepchild relations, eg lack of wealth accumulation, high residential mobility, proximal and intimate living, children's autonomy is respected and relatively egalitarian political, economic, and gender relations (Hewlett et al 2019). The articles emphasise how contexts impact diversity and commonalities of step or adoptive families.

Finally, none of the special issue authors went to the field to conduct research with stepfamilies or adoptive families. However, the ethnographic, life history or demographic methods used by researchers in the special issue included

stepfamilies or adoptive families; consequently, they were able to re-examine and conduct new analyses of their data for the special issue.

Before introducing step and adoptive families, it is essential to provide basic definitions. A stepfamily is a family where one or both parents have one or more children from previous relationships. Theoretically, a foster family is a temporary arrangement and transfer to another family where the child retains their kin terms to their genetic parents even if they are being raised by someone else (Brandl et al 2023; E Goody 1982). In contrast, classic adoption is a more permanent and formalised move to another family. In many Eurasian countries, parental bonds with the genetic parents are permanently broken and often occur with children who have lost one or both genetic parents (orphans).

Adoption–fosterage distinctions can be misleading because several hunter-gatherer ethnographers use the terms interchangeably, do not define terms, and the local (emic) terms for children moving to another family are closer to adoption than fostering. For instance, in the classic studies of hunter-gatherer adoption among the Inuit and Andamans, the transfer of the child may be short or long, children usually retain natal parent kin terms, and the adopted children are not always orphans. Here, we will use the term 'adoption' to refer to transferring children to another family for a year or more. The one-year criterion is arbitrary, but we wanted to distinguish children who live with relatives for a few weeks or months from children who live with others for a longer period of time. The point is that adoption is on a continuum. At one end of the continuum are relatively short-term adoptions that occur for a variety of reasons, such as grandparents needing domestic help, parents wanting to develop alliances, parents wanting their child to learn specific skills or knowledge from others, another family likes the child, the child wants to live with another family. In these cases, children maintain kin terms and relationships with their natal parents. At the other end of the continuum are longer-term adoptions that take place close to the time of birth and where parental bonds are permanently broken. Classic West African examples of 'fosterage', where older children are transferred to another family for several years to learn skills or knowledge (E Goody 1969), and Eurasian 'adoption', where the child's parental bonds are broken and re-established with the adoptive family so that the child can inherit family land or property (J Goody 1976), seldom occur with hunter-gatherers. Authors in the special issue were free to use whatever terms they preferred as long as they were defined.

My (BH) initial interest in step-parents emerged after I tracked 15 Aka families from my study of father–infant interactions (Hewlett 1991b) for five years. During this period, three infants had died, four couples had divorced (27%), a farmer killed one father, and one mother died in the birth of her next

child. Six of the original 15 infants (40%) had lost one parent from divorce or death. At the end of five years, one infant lived with a single father, two lived with a single mother, two had stepfathers and one had a stepmother.

Aka household compositions were also examined. A 13-year-old child had less than a 60% chance of living with both natal parents, and an 18-year-old had less than a 30% chance of living with both natal parents if they were not yet married. Thirteen of 20 adults interviewed about their feelings and experiences with their parents had at least one parent die while they were young. Of the 13 that lost a parent, six lost their mother, three lost their father and four lost their mother and father. Five lived with their mother, and only two of the 20 adults had both parents living (ibid:119).

Aka children's life histories and demographic patterns exist in several other hunter-gatherer groups. Forty-nine percent of Ache children during the forest period did not live with both genetic parents (Hill & Phelps 2024), 22% of Tsiname adult informants reported that, as children or young adults before marriage, they spent time living without both genetic parents (Schniter et al 2024), 18–26% of BaYaka children did not live with both genetic parents (Chaudhary & Salali unpublished data;[1] Boyette et al 2024) and 19% of all Bofi children and youth were not living with both genetic parents primarily due to divorce (68% of cases) or parental death (33% of cases) (Fouts 2024). Dira's (2024) interviews with 38 Chabu adolescents found that 66% did not live with both genetic parents. Among the Efe, Ivey (2000) reported that 27% of children did not have parents in camp during her study because they had lost both parents, their parents were divorced and lived separately, or they were living temporarily away from their parents.

Factors that can contribute to hunter-gatherer children living with non-genetic relatives

Divorce

Two demographic factors can contribute substantially to a high frequency of step and adoptive families are high adult mortality and high divorce rates. Marlowe (2010:178) indicates that 'perhaps 20% of Hadza stay married to the same person their whole life'. The Efe (Bailey 1985), Batak (Eder 1987), and Siriono (Holmberg 1969) also have high divorce rates. Bailey (ibid) indicates

1. Contact the authors for the demographic data on the BaYaka.

that every Efe adult male over 40 had been married at least twice. Dira (2024) states that Chabu women often marry three or four times; 47% of adults have divorced at least once, and 22% have divorced at least twice. A few hunter-gatherer ethnographers provide specific rates, summarised in Table 1. Rates are exceptionally high in some groups, but remarkable variation exists. Generally, at least a quarter to a third of hunter-gatherer marriages end in divorce, which means many children from these marriages end up in non-natal family configurations. Divorce is often informal in hunter-gatherer groups and generally consists of one spouse simply moving out of the house. Property division is infrequently an issue because material wealth (land, cattle or other items) seldom exists, and older children either decide with whom they want to live or go to the parent or family members determined by cultural norms. Divorce and remarriage can lead to stepfamilies. However, adoption may occur if a mother thinks it will hinder her chances of attracting a new mate (Guemple 1979).

Table 1 Divorce rates in selected hunter-gatherer groups

Cultural group	Rate (%)	Reference
Ache	61*	Hill & Hurtado 1996
Agta	18	Headland 1986
Aka	27	Hewlett 1991b
Bofi	54	Fouts 2024
Chabu	46	Dira and Hewlett 2018
Hadza	24–39**	Blurton-Jones et al 2000
Inuit	100***	Burch 1968
!Kung	8–37**	Blurton-Jones et al 2000
Paliyan	35	Gardner 1988
Tsimane	20	Gurven et al 2009

* divorce rate at the end of the first year of marriage during the forest period

** rate varied by length of time of marriage; the higher number is the divorce rate for marriages that lasted four years or less, and the lower number is the divorce rate when marriages lasted more than 13 years.

*** 'There is reason to believe that the divorce rate approached 100%. That is, virtually everyone broke the residence tie with their spouse at least once, and many did so several times' (Burch 1970:167).

Table 2 presents data on the average number of mates/marriages a man or woman may have during the reproductive years. It is another measure of the domestic unit that may contribute to stepfamilies or adoption.

Table 2 Number of mates in a lifetime

Cultural group	Mean number of mates of adult males	Mean number of mates of adult females	Mean number of mates of adult males and females	Reference
Ache	10.8	11.7	ND	Hill & Kaplan 1988
Aka	ND	1.9	ND	Fouts 2024
BaYaka	1.6	1.1	1.3	Chaudhary & Salali, unpublished data[2]
Bofi	ND	2.2	ND	Fouts 2024
Hadza	3.3	1.6	ND	Marlowe 2010
Hiwi	ND	1.7	ND	Hurtado et al 1992
!Kung	ND	2.5	ND	Blurton-Jones et al 2000
Paliyan	ND	ND	2.4	Gardner 2009

Parental death

Mortality in middle-aged adults also contributes to stepfamilies and adoption. Hill and Phelps (2024) indicate that 26% of Ache children probably lived with a step-parent or some other adult alloparent due to parental mortality alone. Schniter et al (2024) found that 17% of Tsimane informants lost one or both parents to death.

For men, violent deaths in several hunter-gatherer groups are common. Among the Agta of the Philippines, 21% of all adult male deaths are a result of homicide (Headland 1986). In South America, 73% of Ache and 39% of Hiwi adult deaths are a result of warfare and accidents (Hill & Hurtado 1989). Usually, violent deaths are men killing men, but among the Hiwi, just as many women are killed as men (Hill, Hurtado & Walker 2007). Adult male deaths due to violence are less common among the Aka, Batak, Paliyan, Ongee, Efe, Batek and Mbuti. Infectious and parasitic diseases contribute to adult deaths in all hunter-gatherers, but they are the primary causes of adult death in these populations. Males are also at greater risk of accidental deaths during early and middle adulthood than females. For instance, Aka males in their early twenties are four times more likely to die than females from accidents. Most of the deaths are the result of men doing risky tasks, eg hunting an elephant or climbing a large tree to get honey.

While male mortality during the reproductive years is more likely to be violent or accidental, death in childbirth is not an unusual cause of death for

2. Contact the authors for the demographic data on the BaYaka.

adult women. Headland (1986) reports that 14% of all Agta adult female deaths are the result of complications during childbirth. Among the Aka, about 9% (9 of 102 deaths) of adult women who died between the ages of 18 and 45 died from childbirth complications. Among the Tsimane, women died in childbirth at a rate of 702 out of 100,000, which Gurven and colleagues report is higher than the rate in 94% of 183 countries in 2012 (Gurven et al 2016).

Rapid culture change and pandemics/epidemics can also contribute to high rates of adult mortality. The HIV/AIDS pandemic of the 1990s and 2000s in Southern Africa led to a considerable increase in parental deaths, including higher adult mortality among San populations (G|ui, G‖ana, !Xun, ǂAkhoe/Hai‖om) where HIV rates were 10–12% (Dieckmann et al 2014).

Cultural models/norms/institutions

Cultural models, ie beliefs and feelings about appropriate behaviour and associated cultural norms and institutions, profoundly influence the frequency and nature of step-parenting or adoption. Cultural models influence what the community expects to happen with children after the divorce or death of a parent and whether a child can expect to be transferred to another family during their lifetime. Andaman Islanders have cultural models where almost all children anticipate being adopted by the age of nine or ten. Cultural models enable several forms of adoption among the Inuit, so anywhere between 25 and 70% of children expect to be adopted. Everyone knows someone who has been adopted, and the communities talk about child transfer openly. Among the Cholanaickan, cultural models promote special considerations and care of adopted orphans in the lineage (Kakkoth & Chellan 2024). In these cultural contexts, adopted children are not stigmatised as they might be in EA cultures. By comparison to Andamans and Inuit, the Vedda hunter-gatherer do not have cultural models for adoption, and other hunter-gatherer cultures have models for adoption only after the death of one or both parents. Cultural models impact multiple other dimensions of adoption, eg who has the right to request an adoption, who has the right to adopt the first versus the second child, and what happens to a family that refuses to allow their child to be adopted.

Likewise, cultural models and norms can impact an individual's decision to divorce. Personal life and economic circumstances can influence divorce decisions, but cultural norms also play a critical role. Ache cultural models enable easy and quick divorces; one partner can simply say they 'wanted someone else' (Hill & Hurtado 1996:233). Ache divorce rates were especially high during the forest period. However, they declined substantially during the

reservation period, from 61% to 28% in the first year of marriage, partly due to the influences of cultural models from missionaries and Paraguayan neighbours (ibid:231). Divorce and regular separation were also cultural expectations of the North Alaskan Inuit (Burch 1965), where close to 100% of couples separated, while divorce among the Cholanaickam of South India was not expected (Kakkoth & Chellan 2024). The cultural models and resulting divorce and remarriage patterns impact how children are viewed in the community, where children live after their parent's divorce, how long a parent waits before remarriage, how children are incorporated into the community, kinship terms used to refer to step or adopted children, and the types of appropriate care of step and adopted children.

Cultural models for the treatment of adopted or stepchildren may not always benefit the children. Among the Paliyan hunter-gatherer of South India, a culturally preferred form of marriage is a mother or father marrying their stepchild or a child they adopted (Gardner 2009). The child could be raised to become a second spouse, or a marriage to the stepchild or adopted child could occur after the parent's divorce from the first spouse. Gardner found that 12% of Paliyan marriage unions fell into these categories. Hurtado et al (1992) report that they often heard Ache say, 'we disliked orphans', and that before an adult died, they sometimes requested that a companion go with them and that an orphan would be selected, killed or buried alive with the individual.

Finally, three foundational schemas, ie relatively concise ideas and values that pattern thinking and feeling pervade many domains of hunter-gatherer life. Multiple more detailed and specific cultural models exist within each foundational schema (Holland & Quinn 1987). The three foundational schemas exist at some level in many but not all hunter-gatherer, impacting the frequency and dynamics of step and adoptive families. Schemas include an egalitarian ethos, respect for an individual's autonomy, and extensive sharing. An egalitarian ethos devalues hierarchical ranking, including political, age or gender ranking. Relative gender equality means men or women can initiate divorce. Relative age equality means children may not show deference and respect to parental or elder's wishes. Respect for individual autonomy in the community context is also a core value that can permeate several dimensions of hunter-gatherer family life. In many hunter-gatherer cultures, middle-aged and older children can decide which parent they want to live with if their parents divorce (infants and toddlers usually stay with their mothers) and where and with whom they want to sleep at night. Children have a say in whether they want to live with an adoptive family. One does not coerce or tell others what to do, including children. Finally, giving or sharing is also a pervasive way of thinking and

behaving. Aka share 50–80% of the food they acquire with everyone in camp, and they share it daily (Kitanishi 1998). Sharing of childcare is also extensive, as described by Omura, Fouts, Hill & Phelps and others in this special issue. Mothers are primary caregivers, but care from multiple others occurs daily and can contribute up to half of the child's care (Ivey 2000; Hewlett & Lamb 2005). The pronounced sharing of food and childcare means that hunter-gatherer children receive care (providing, affection, education) from many people, which may make the move into a stepfamily or adoptive family, often with individuals they already know, less emotionally stressful than in an EA setting.

Stepfamilies

Stepfamilies exist in all hunter-gatherer cultures, but Marlowe's (1999) study of stepfathers and the articles in this special issue are the only studies that focus on hunter-gatherer stepfamilies.

The special issue articles show substantial cross-cultural variability in the percentage of children in this family formation. At the high end, about 41% of Ache children lived with one parent and one step-parent during the forest period (Hill & Phelps 2024), 39% of Chabu adolescents live in stepfamilies (Dira 2024), and one-third of Hadza children under the age of 10 live with stepfathers (Marlowe 1999). In several cultures with data, about five to 20% of children live with stepfamilies. About 10% of Bofi children and youth live with a step-parent (Fouts 2024), and 5–20% of BaYaka children live with a step-parent (Chaudhary & Salali, unpublished data;[3] Boyette et al 2024). About 20% of BaYaka children lived only with maternal relatives (and neither parent) (Chaudhary & Salali, unpublished data).

An examination of kinship diagrams of Mbuti (Turnbull 1965) and Paliyan (Gardner 1988) hunter-gatherer households shows that 35% of Mbuti and 55% of Paliyan households are one-parent or step-parent households.

It is important to remember that the stepfamily frequencies listed above are based upon cross-sectional studies; they are a snapshot in time of hunter-gatherer family composition. Researchers point out that substantial variation occurs from year to year.

The frequency of hunter-gatherer children living in stepfamilies also varies significantly by age. Hill & Phelps (2024) found that by the time an Ache child was five years old, they had a 44% chance of having lived in a stepfamily, but

3. Contact the authors for the demographic data on the BaYaka.

if a child survived to age 10, they had an 87% chance of having lived within a stepfamily. About 20% of Hadza children lived with stepfathers at age five (Blutron-Jones 2016), but by age 10, about one-third lived with stepfathers (Marlowe 1999). Hewlett (1991b) found that 19% of young and middle-aged Aka children lived with a stepparent, while over 40% of adolescents lived with a stepfather or stepmother. Bofi children lived with step-parents about 4% of the time in infancy, but by adolescence, they lived with a step-parent 15% of the time (Fouts 2024). A study of male Chabu adolescents' social learning found that they lived with a stepfamily 32% of the time (Dira & Hewlett 2016).

Changes with age are not limited to stepfamilies. BaYaka infants lived with both genetic parents 85% of the time, but only 54% lived with both by adolescence. However, they seldom lived in stepfamilies (only about 5% of the time). Twenty-nine percent of the adolescents lived with their mothers and other female kin, and 18% lived in other households, eg with their adolescent friends (Chaudhary & Salali, unpublished data).

Few studies compare the care provided by step-parents (usually stepfathers) and genetic parents. The cultural norm in most hunter-gatherer cultures, including those in the special issue is that genetic and non-genetic children are treated equally. However, observational data appear to contradict the cultural norms. Almost all Hadza adults interviewed by Marlowe (1999) said that stepfathers felt the same about their stepchildren as they did about their genetic children. Still, despite this norm, focal observations of eight stepfathers found that fathers spent more time near their genetic children, played more with them, and cared for them more often (held, fed, groomed).

Aka adults with stepfathers (N=8) said they had a close relationship with their stepfathers, treated them as their own, and had no significant problems. A few informants said that their stepfather treated them better than anyone else. The only issues with stepfather interviews came from two of the eight female adolescents who said their stepfathers got angry at them more often than anyone else (the other six said the mothers got more angry at them). However, the few (N=3) all-day focal follows of Aka stepfathers indicated that they provided limited infant care and were more likely than genetic fathers to be away from camp (Hewlett 1991b).

The hunter-gatherer observational studies of step-parents have three limitations: small sample sizes, all are conducted with infants or young children under the age of eight, and the behaviours coded during observations focus on direct care (holding, proximity, interactions). Another issue with comparing the treatment of genetic versus non-genetic children is the 'degree of familiarity' (Beckhoff 1981). Do genetic parents provide more care because they have been

around their children longer and know them better than step-parents who have just moved into the relationship?

Brief overview of evolutionary anthropology studies of stepfamilies

Evolutionary anthropologists have been interested in stepfamilies because inclusive fitness theory indicates parents should invest more in genetic than stepchildren (Hamilton 1964). The preferential parental care of genetic children is sometimes referred to as the 'Cinderella effect' by evolutionary anthropologists, and several evolutionary studies in nation-states have shown that stepchildren are at greater risk of abuse than genetic children (Daly & Wilson 2008). As mentioned, Marlowe (1999) conducted the only systematic study of step-parenting (fathers only) with a hunter-gatherer group and found that Hadza's genetic fathers stayed closer to, played more with, and provided more nurturing to children than did stepfathers. Fouts's study (2024) with the Bofi also found differential care between genetic fathers and stepfathers. Both Marlowe and Fouts recognised that the implications of their research were limited because of their small sample sizes (eight in Hadza and four in Bofi).

Flinn (1992) found a similar pattern in a farming community in Dominica in the Caribbean; stepfathers interacted more frequently and had fewer antagonistic relations with genetic than with stepchildren. His study does not identify the ages of the stepchildren. Similar results exist for stepfathers in New Mexico (US) (Anderson, Kaplan & Lancaster 1999) and among Xhosa stepfathers in South Africa (Anderson et al 1999; Gray & Anderson 2010). These studies also showed that stepfathers invested more in stepchildren when living with the child's mother but invested less in their coresident stepchildren than in the couple's genetic children.

Another study by evolutionary anthropologists in a non-hunter-gatherer group examined over 400,000 children younger than 18 born between 1847 and 1940 and their siblings in a Utah database with good genealogies that allowed researchers to assess survival probabilities of genetic and stepchildren (Schacht et al 2020). They did not find evidence of the Cinderella effect; having a step-parent did not decrease child survival, and within the same family, stepchildren had a significantly lower mortality rate than their half-siblings. They argue that step-parents may rely upon the productivity and contributions of stepchildren. The contributions of stepchildren are somewhat similar to what K Endicott (1992:283) says about Batek stepfamilies:

> Divorce enlarges the social world for children as it often brings them into close contact with people other than their parents […] the sense of loss of a child may

> feel at not having both parents under the same roof may be mitigated by the frequent contact children continue to have with each parent and by the expansion of relationships with others.

Takada and Noguchi (2024, this issue) indicate this also applies to San groups.

Brief overview of cultural anthropology studies of stepfamilies

Stepfamilies are a common feature of hunter-gatherer life, but as far as we know, systematic studies of hunter-gatherer stepfamilies do not exist in cultural anthropology. This may not be surprising given that few cultural anthropologists have conducted field studies of stepfamilies in any small-scale culture.

In his comparative studies of Eurasian and sub-Saharan cultures, anthropologist J Goody (1976) was interested in step relationships. He hypothesised that in sub-Saharan subsistence farmers, where land was relatively plentiful and polygyny, classificatory kin terms and patrilineal inheritance were standard, little effort existed to distinguish step-parents or children from classificatory mothers, fathers and children. An individual can have several kin classified as 'mothers', 'fathers', or 'children', and a child of any of the father's wives will receive equal inheritance. If a woman remarries, the children from the previous marriage will receive resources from that husband, and children with the new husband will receive material items from him. The children of the prior marriage call the new husband 'father'. Marlowe says this is also the case among the Hadza (Marlowe 1999). Goody hypothesises that step and natal parent distinctions were more common in Eurasian cultures where intensive plough agriculture existed, farmland was limited, social and wealth inequalities were pronounced, and inheritance significantly contributed to an individual's socioeconomic well-being: 'Any new marriage will necessitate a degree of protection of the children of either of the spouses by a previous marriage. Hence the concept of step-parenthood and stepchildren, which differentiate the members of the two nuclear families created by serial monogamy' (ibid:53).

Goody (ibid) indicates that the 'Cinderella effect' needs two features to occur: inheritance of valuable land and hypergamy (marrying up in socioeconomic class). Neither is common in hunter-gatherers. Hypergamy can occur when hunter-gatherers start to marry farmers or pastoralists with land or cattle. Consistent with Goody's observations, stories of the 'Cinderella effect' and the wicked stepmother appear infrequently among hunter-gatherers (Scalise Sugiyama, unpublished data).[4]

4. Contact the author about some number of stories and tales about stepfamilies in hunter-gatherer.

Paul Bohannan (1970; 1984), one of the few cultural anthropologists who examined step-parenting, provides ethnographic support for Goody's hypothesis. Among the horticultural Tiv in West Africa, where patrilineal descent, polygyny and patrilocality occur, kin terms for step-relatives do not exist. Children of the father call all co-wives 'mother'. One does not have stepbrothers; all are 'brothers.'

Cultural anthropologists have also provided detailed critiques of the middle-class American 'standard model' of the family (Mead 1970), 'where it is expected that marriage will be monogamous, that the family will be nuclear, neolocal, and co-residential, and that the members of the family household are entitled to one another's attention and affection' (Jacobson 2003:31).

Adoption

Substantially more systematic anthropological studies exist on adoption-fostering than on stepfamilies. However, the vast majority of these studies have been conducted with subsistence farmers (Bledsoe 1990; Brandl et al 2023; E Goody 1969; Isiugo-Abanihe 1985; Keesing 1970; Silk 1980), pastoralists (Pennington 1991; Scelza & Silk 2014) or urban industrialists (Mattison et al 2018; Wolf 1980). Edited volumes include diverse coverage of ethnic groups (Bowie 2004) but do not include hunter-gatherers. Guemple's (1979) excellent overview of Inuit adoption is the only hunter-gatherer monograph on the topic.

To understand the frequency and nature of adoption in hunter-gatherers, a brief eHRAF (electronic Human Relations Area Files) survey was conducted. It has ethnographic data on 24 mobile egalitarian hunter-gatherers (Garfield et al 2016), and an Outline of Cultural Materials (OCM) code exists for adoption (597). An OCM code did not exist for stepchildren, and searches using keywords generated little information, mostly about kin terms for stepchildren. The lack of an OCM code indicates that anthropologists have been more interested in hunter-gatherer adoption than stepfamilies.

The survey generated 149 paragraphs of information from 21 hunter-gatherer cultures. Table 3 summarises the relative frequency and cultures with adoption. Only one of the 21 cultures reported that adoption did not exist (Vedda). In some cultures, it only occurred after the death of one or both parents (orphan adoption). In the majority of hunter-gatherer cultures, it happened regularly for a variety of reasons. Some of the reasons given for adopting a child included the desire to increase the size of the hunting unit, provide a child to a couple that had few or no children, sterility, grandparents or others wanting help around

the house or with subsistence, a neglected child, and death of a parent (orphan adoption). Reasons for adopting out included divorce, desire to build alliances with other families, family too large, expression of attachment to close female relatives, and illegitimate birth (no father identified). Finally, adoption was institutionalised in three hunter-gatherer cultures. All or a large proportion of children among the Andamans, Inuit and Ojibwa expect to be adopted by another family.

Table 3 Frequency of adoption in 21 hunter-gatherer cultures in HRAF

Frequency	% of cultures	Cultures
No adoption	4.8 (1)	Vedda
Infrequent (few cases described, primarily orphan adoption)	19.0 (4)	Okiek, Semang, Tiwi, Warao
Common (several cases and types of conditions for adoption)	38.0 (8)	San, Mbuti, Ainu, Aleut, Chipewyan, Innu, Kaska, Mu'qnaj
Institutional (a third of all children are adopted for a variety of reasons)	14.3 (3)	Andamans, Copper Inuit, Ojibwa
Not enough information to determine	23.8 (5)	Northern Paiute, Siriono, Bororo, Ona, Yaghan

In comparing the care for adopted versus genetic children, ethnographic data existed on eight cultures. Ethnographies of seven of the eight cultures indicated that adopted children were treated the same as genetic children. Radcliffe-Brown describes equal treatment among the Andamans (1922:77):

> The foster-parents treat their adopted children in exactly the same way that they would treat their children, and the children, on the other hand, show the same regard and affection to their foster-parents that they do to their parents and assist them in every way that they can. Their parents come to visit them at regular intervals.

The quote demonstrates that ethnographers at that time did not distinguish adoption from fostering and that the adopted child did not break kinship ties with the natal family. Condon (1988:98) describes some of the benefits of adoption among the Copper Inuit: 'In some respects the position of many adopted children is better in their adopted homes than if they remained with their biological parents and siblings. Often, they are adopted into less crowded households with fewer children to compete for family resources'.

On the other hand, Guemple's (1979) descriptions of Inuit adoption make it clear that genetic parents are careful about selecting someone to adopt their

child, in part because of concerns that their child may not receive proper treatment (ibid:30). This is why Inuit tend to select close relatives to adopt (but the spouse of the close relative would not be related). Inuit parents also consider adopting out to families with ritual status and those with whom they would like to develop alliances.

Adoption or fostering is another way in which a hunter-gatherer child may not live with both genetic parents. It is common for older children in larger families to move in with grandparents or aunts and uncles who have smaller families or need help with domestic chores. Pandya and Gardner (in Hewlett 1991a) report that none of the Ongee or Paliyan 11–15-year-olds were living with natal parents because they were living with adoptive families. Dira (2024) found that Chabu adolescents lived in adopted families about 24% of the time, usually their mother's brother or brother. One of the relatives was genetically related, and the other was not.

Two of the articles in the special issue discuss adoption in depth. Omura indicates that almost every adult in his Kugaaruk field study area had experiences living with household members who had been adopted in or out. Like the adoptive cultures mentioned above, he also found cultural norms of equitable care and provisioning of adoptive children. Kakkoth and Chellan's study of Cholanaickan adopted orphans in South India also documents regular adoption and the special consideration, indulgent care and provisioning adopted children receive.

Brief overview of evolutionary anthropology studies of adoption

Adoption occurs in many non-human primate species but is much more common in humans (Anand et al 2022). Joan Silk was one of the first anthropologists to use evolutionary theory to examine adoption (1980) in humans. At the time of her study, cultural anthropologists suggested that frequent adoption in Oceania demonstrated that biology played a minimal role in parental care and assumed, from an EA framework, that the adopted family was not genetically related to the child. Her research showed that in 11 Oceania societies with data, genetic relatedness was an important criterion for both the selection for and treatment of adoptive children. Multiple evolutionary studies of adoption in cultures from other parts of the world have confirmed the results (Bledsoe 1990; Brandl et al 2023). Among hunter-gatherers, Guemple's (1979) Inuit data are generally consistent with the kinship adoption hypothesis, in that Inuit prefer to adopt out to relatives, but the type of treatment adoptive children receive is more equitable. Omura's Inuit (2024) and Kakkoth and Chellan's

Cholanaickam data (2024) also indicate that adoptive hunter-gatherer parents do not bias their care towards their natal children.

As stated above, an issue with the kin adoption hypothesis is that children may be adopted by a genetic relative, ie sister, brother, aunt or uncle, but the spouse of that individual would not be genetically related to the child. Like stepfamilies, the child lives with one genetic and one non-genetic relative. This is not the case if grandparents adopt a child.

Evolutionary anthropologists have also emphasised that humans are cooperative breeders (Hill & Hurtado 2009; Hrdy 2009), ie many individuals besides mothers contribute to the caretaking and provisioning of children (called allomaternal care). Both step and adoptive parenting are forms of allomaternal care and cooperative breeding. One type of cooperative breeding that occurs with adoption is dispersed cooperative breeding (Scelza & Silk 2014), in which the mother transfers a child to other families to concentrate on other children. An example of this is when large families adopt out children to families with no or few children. Alliance adoption is another form of cooperative breeding where caregivers use adoption to increase socioeconomic ties and networks between families or develop and reinforce lineage and social hierarchies.

This special issue extends our understanding of the nature of cooperative breeding in humans. Articles by Fouts, Hill & Phelps, Boyette et al, Schniter et al and others provide more details about and use this theoretical approach to frame their research.

Finally, some evolutionary anthropologists hypothesise that adoption would not have been part of the evolutionary environment of human adaptation, the 95% of human history characterised by hunting and gathering (Daly & Wilson 2008). They suggest that parents should not adopt out their genetically related children or adopt children that are not genetically related to them: the HRAF survey and other hunter-gatherer data in this issue question the hypothesis.

Brief overview of cultural anthropology studies of adoption

More systematic cultural anthropology studies exist on adoption than on stepfamilies. Regarding hunter-gatherers, multiple studies exist on Inuit adoption (see Guemple 1989; Omura 2024; Silk 1987 for overviews). The eHRAF adoption study discussed previously also identified several hunter-gatherer studies with adoption, including Radcliffe-Brown's classic cases of adoption among the Andamans and the lesser-known studies by Turnbull (1965) on adoption among the Mbuti. The hunter-gatherer cultural studies are primarily descriptive and have a limited theoretical framework.

Takada (2022) also indicates that the !Xun and ǂAkhoe/Haiǁom San living in north-central Namibia have interacted with the Owambo agro-pastoralists for centuries and have developed a cultural practice where San children are adopted (called fostering in the literature) by Owambo families with no genetic kin relationships. The !Xun and ǂAkhoe/Haiǁom have surnames corresponding to Owambo clan names, and the Owambo think and feel that it is a good thing to adopt an older San child with a Owambo clan name. The two systems (surname and clans) are being interactively reorganised because of years of inter-ethnic negotiations.

More theoretically framed cultural anthropology studies of adoption exist among subsistence farmers and pastoralists than among hunter-gatherers. E Goody (1982) provided detailed ethnographic descriptions of Gonja and other West African adoption (she used the term fostering). She indicated that the natal parent–child relationship had several features: bonds of begetting, birth-status identity, nurturance reciprocities, training reciprocities and sponsorship reciprocities. When a child is sent to live with others in order to obtain religious or professional instruction (apprentice adoption), which is common in West Africa, the adoptive parents take over training and sponsorship reciprocities. In contrast, the natal parents maintain the other characteristics. In her view, adoption was limited to cases where the adopted family took over all features of parent-child relations except the bond of begetting. J Goody built upon his wife's research to develop his theoretical distinctions between adoption in Eurasia and fostering in West Africa. J Goody was a structural-functionalist and indicated that adoption in Eurasia often functioned to provide an individual or couple heirs to their property. Breaking bonds with the natal family was necessary, and the child was given a new identity. With West Africa fostering, the land was relatively plentiful, wealth inequalities were limited and inheritance was not that important; therefore, parents could transfer a child to another family, often temporarily, usually for apprentice training, but the child maintained their kinship and other ties to their natal family.

Cultural anthropologists have documented several subsistence farming and pastoralist groups in Melanesia, Africa and Pacific Island cultures where adoption is the norm for children growing up (Bowie 2004). Thirty to 70% of children are adopted or fostered in these cultures, and it may be the preferred way to raise a child. Among the Baatombu of West Africa, people feel that natal parents are less able than adoptive parents to provide a good education for their children (Alber 2004). Adoptive care for and treatment of children are expected to be equal to that of genetic children. Notermans (2004) indicates that Cameroonian parents do not discriminate between their own and adoptive

children, but they do distinguish and provide better care to adopted children of the same lineage than to children of another lineage.

What's new?

This section highlights a limited number of relatively new and insightful results from articles in this special issue. The theoretically and methodologically diverse approaches of the articles provide important and sometimes novel contributions to the literature on step and adoptive families in hunter-gatherers.

- Living with non-genetic parents and relatives is common in hunter-gatherer childhood and adolescence. Non-genetically related adults and children contribute to child provisioning, caring, education, and protection (several articles).
- In general, cultural models and norms exist that promote sensitive and equitable care of both natal and step or adoptive children. Frequent and empathetic care of non-genetic children is consistent with the hunter-gatherer foundational schema of extensive sharing and giving of food and childcare (HRAF study in this article; Kakkoth & Chellan 2024; Omura 2024).
- Hunter-gatherer social, subsistence and cultural life are characterised by pronounced flexibility. Hunter-gatherer family formations are no different. Family formations vary both within (Boyette et al 2024) and between hunter-gatherer cultures as individuals try their best to adapt to local conditions. Again, more research is needed to better understand both within and between cultural variations in family formations.
- Extensive variation exists in the frequencies of both stepfamilies and adoptive families in hunter-gatherers. Stepfamilies occur in all hunter-gatherers but are particularly common in cultures with frequent divorce, high adult mortality and rapid remarriage, such as with the Ache, Hadza and Chabu. Adoption also occurs in most hunter-gatherers, but it is especially pronounced where it is institutionalised, ie cultural models and norms promote the transfer of most children in the culture to other families, such as with the Inuit, Andamans and Ojibwa. Several hunter-gatherer cultures have both regular step and adoptive families, such as with the Inuit, Mbuti and Paliyan, Future systematic studies are needed to evaluate potential factors that explain the variability.

- Non-genetic caregivers can be substantial sources of cultural innovation and cumulative culture (Boyette et al 2024).
- Rapid cultural change can lead to higher rates of divorce, adult death, remarriage (Ache, San and Chabu), and adoption (Inuit, Ojibwa).
- Social relations between divorced, non-residential genetic parents of a child are often maintained (Dira 2024; Takada & Noguchi 2024; Boyette et al 2024; Fouts 2024).
- Grandmothers invest more when the child is living with a stepfather (Fouts 2024).
- Hunter-gatherer cultural models indicate that parents are expected to treat their step or adoptive children in the same caring ways as their genetic children (HRAF study in this article; Kakkoth & Chellan 2024; Omura 2024; Takada and Noguchi 2024; Boyette et al 2024). However, the few observational studies suggest that stepfathers are less engaged with their young stepchildren (no studies with older stepchildren or stepmothers) than with their genetic children (Fouts 2024).
- Older generation genetically related Tsimane alloparents tend to provide more costly forms of help to young children. In contrast, alloparents who are not genetically related tend to provide lower-cost forms of help to older children, adolescents and young adults. Non-genetically related alloparents may invest more in older youth because they are more capable of reciprocity; the help is an investment in future reciprocal relationships (Schniter et al 2024).
- Except for the Ache, the articles in this issue do not indicate that step or adopted children are stigmatised or have social-emotional or developmental issues. More research is needed.
- Articles in the issue and the HRAF study indicate that adoption, like step-parenting, regularly occurs in hunter-gatherer life. The studies question Daly and Wilson's (2008:384) proposal that adoption was not part of the human adaptive pattern.

Emerging issues and future research

Several issues and questions emerged from the issue that may be useful for future research.

Child-initiated actions in step and adoptive families

Social learning studies with hunter-gatherer show that child learning is self-initiated (Hewlett et al 2011). Foundational schemas emphasise the cultural centrality of respecting the autonomy of the individual, including children. Little is known about the roles children play in initiating actions in step and adoptive families. Existing studies tend to focus on the parents and adult decisions that impact children, eg parents decide who adopts a child, who they want to make alliances with through adoption, and where a child lives after divorce. Hunter-gatherer children often choose where they want to sleep at night and what they do during the day, and a few ethnographers indicate that children over the age of seven frequently have a say in which parent they want to live with after a divorce (Dira 2024). Gardner (2009) states that even when cultural models exist where adults marry a stepchild or adopt a child to marry in the future, children always have the option to refuse to marry the person. Several studies indicate that hunter-gatherer children may be adopted by grandparents, a mother's brother's family, or other relatives. Are children the initiators of these actions? Along similar lines, how do children view divorce and adoption? How do they feel about living with step-parents, step or half brothers or sisters?

The developmental cycle of hunter-gatherer families and mother-child families

In several hunter-gatherer groups, the percentage of children living in single-mother families is similar and sometimes greater than the percentage of children living in stepfamilies. Demographic data from the issue show that 5–30% of children live with their mothers and other female relatives (Boyette et al 2024; Chaudhary & Salali, unpublished data).[5] This implies that the developmental cycle of the family begins with a genetic nuclear family, moves to a mother-child family after a divorce or death of a spouse, and then to a step or adoptive family after remarriage or transferring a child to another family. This does not consider all the other individuals in a hunter-gatherer community that may move into the household for short or long periods. Cultures vary in the length of each phase. We know about the variability and reasons for the length of marriage and divorce in the first phase (from marriage to divorce), ie that hunter-gatherer marriages may last a few days to over 40 years, but little is known about the second phase with mother-child families. In some cultures, remarriage can be rapid, as with the Ache or Chabu, or it can take a very long time, as with the BaYaka, leading to more mother-child families. For instance, Chabu remarriage is rapid, and only 3% of adolescents live with mother and

5. Contact the authors for the demographic data on the BaYaka.

other women, whereas among the BaYaka, where remarriage takes longer, approximately 25% of adolescents live in a household with their genetic mother but no genetic or stepfather; in many of these cases other maternal kin live in the same household. What is the nature of female-headed households? What is the nature of reciprocity and sharing food, childcare and cultural transmission with other families in the camp? What demographic, economic or cultural factors influence the variation in time to remarriage?

Stepmothers

Demographic and kinship data identify several cases of stepfather families but relatively few stepmother families. This suggests that children often stay with their mother or mother's female relatives after a divorce or death of a spouse and remarriage. A limited number of hunter-gatherer studies describe stepfather–stepchild relations, but no study that we are aware of systematically focuses on stepmothers, compares the nature of child interactions between stepmothers and stepfathers, or tries to understand why children often stay with mothers after divorce.

Conclusions

This special issue provides one of the few collections of field-based research on hunter-gatherer step and adoptive families. The articles are exploratory and provide a start to understanding the diversity of hunter-gatherer families but are also an urgent call for more systematic studies. The issue identifies frequencies of step and adoptive families in hunter-gatherers, some of the causes of these family formations, and provides preliminary descriptions of the diverse cultural contexts of the families. However, as noted, several questions and issues remain. Future research can contribute to evolutionary, child development and cultural anthropology theories about family relations. Focused studies can also influence public policy on the increasingly diverse family formations in all parts of the world.

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